

**A STUDY ON THE ROLE PERFORMANCE OF THE
AGRICULTURAL EXTENSION PERSONNEL IN THE
REVITALIZED EXTENSION SYSTEM IN THE STATE OF
ASSAM**

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ABSTRACT

Public sector extension in India has undergone several changes since the early 1950s. Beginning with the Community Development Program in 1952 through the National Extension Service in 1953, the focus of extension was on human and community development. Subsequently, a steady progression towards technology transfer was ushered in with launching of many other agricultural and rural development programmes. The most significant recent development was the introduction of the Training and Visit (T&V) extension management system in the mid 1970s which profoundly influenced extension activities and registered impressive gains in agricultural production in the country. In country like India where agro-climatic zones widely differ besides significant variation in socio-economic status of farmers, uniform extension service is not the panacea for all the regions. Of late it was realized that the present public sector extension system on its own is not capable enough to meet the ever increasing and multi faceted demands of the farming community due to several constraints or weaknesses in the system. So, it was felt that the present public sector extension system should be reformed to meet the farmer's technological requirements. Thus, to address the specific constraints, weaknesses and gaps in the present extension system, the National Agricultural Technology Project (NATP) was initiated by the Ministry of Agriculture, Govt. of India, with financial assistance from World Bank in 1998 initially in 7 states covering 28 districts. The Innovation in Technology Dissemination (ITD) component of NATP aimed at addressing key constraints in technology generation, validation and dissemination by introducing certain institutional models and operational reform processes in selected states in the country. The institutional arrangements were made through creation of ATMA as registered society at district level. The operational reforms were made through decentralized decision making by increasing the farmer's input into programme planning and resource allocation. In Assam, the revitalized extension system was started under the World Bank aided Assam Agricultural Competitiveness Project (AACP) initially in 11 districts. The effective implementation of ATMA largely depends on how effectively the extension functionaries perceive their roles and perform those. However, the number of study related to role performance under revitalized extension system in India is very few. Keeping these facts in view, the proposed study entitled **"A study on the role performance of the agricultural extension personnel in the revitalized extension system in the state of Assam"** was undertaken with the following objectives.

- 1) To determine the level of role performance as perceived by the agricultural extension personnel in the revitalized extension system
- 2) To identify the variables which significantly contribute towards the level of role performance of the agricultural extension personnel in the revitalized extension system
- 3) To determine the direct and indirect effects of selected variables on level of role performance of the agricultural extension personnel in the revitalized extension system

The present study was conducted in Assam, one of the states of North-Eastern region of India. A multistage purposive sampling method was followed to select the respondents for the study. The study was carried out in 11 (eleven) districts of Assam where Agricultural Technology and Management Agency (ATMA) was initially constituted under the World Bank aided Assam Agricultural Competitiveness Project (AACP). A total of 115 agricultural development blocks from 11 ATMA districts were covered under the study. Agricultural Development Officers (ADOs) who have worked as conveners in the respective Block Resource Centres (BRCs) of the sampled districts were selected as respondents for the study. Thus 112 ADOs from 11 ATMA districts constituted the sample of respondents for the study. The primary data for the study were collected during the period from March to July, 2015.

The level of role performance of the extension personnel was the dependent variable in the study. A standardized index consisting of 42 role items was developed to measure the dependent variable in the study. The 42 role items of the index were distributed under 7 different role dimensions, namely, planning, organizing, staffing, directing, coordinating, reporting and budgeting. A total of 15 independent variables were selected for the study. For convenience of the study, the independent variables were categorized into three categories, namely personal, psychological and organizational variables.

The primary data for the study were collected through personal interview method with the help of a pretested structured schedule. Various descriptive and inferential statistical measures were employed to analyze the data. In the context of the statistical analysis, a set of explicit hypotheses were formulated in the present study. In general, testing of hypotheses was done on the basis of null hypotheses under consideration.

The findings of this study revealed that majority of the respondents belonged to the middle aged category (61.61%) and M.Sc (Agri.) passed (53.57%). Majority of them had 7 to 17 years of service experience (73.21%) and 17 to 42 days of training exposure (77.68%). Majority of the respondents had medium level of decision making ability (76.79%), medium level role awareness (68.75%) medium level of role perception (71.43%), medium level of job involvement (63.39%), medium level of role conflict (63.39%) and medium level of role ambiguity (58.93%) Majority of the respondents had favourable attitude towards ATMA (66.07%) with medium level of achievement motivation (66.96%). Majority of the respondents perceived the motivational climate as favourable (58.93%) with moderate level of job satisfaction (66.07%) and medium level of job anxiety (65.18%).

Majority of the respondents (62.50%) had medium level of role performance followed by 19.64 per cent respondents who had low level of role performance. The rest 17.85 per cent had high level of role performance.

As regards to performance of different role items by the respondents under planning role dimension, the highest rank was occupied by the role item 'Identification and prioritization of needs and interest of the farmers' with a weighted mean score of 3.642. The role item

‘Organizing farmer’s meeting in setting aims and objectives’ occupied the highest rank under organizing role dimension with a weighted mean score of 3.312. Under staffing role dimension, the highest rank was occupied by the role item ‘Helps in formation of Farm Information and Advisory Centre’ with a weighted mean score of 3.535. Under directing role dimension, the role item ‘Providing timely and relevant information to farmers’ occupied the highest rank with a weighted mean score of 3.571. Under coordinating role dimension, the highest rank was occupied by the role item ‘Coordinating assessment, refinement, validation and adoption of front line technologies with local research centres’ with a weighted mean score of 3.267. Under reporting role dimension, the highest rank was occupied by the role item ‘Supporting ATMA management committee in discharging its function’ with a weighted mean score of 3.169. Under budgeting dimension, the role item ‘Maintaining proper record and account for the activities carried out’ occupied the highest rank with a weighted mean score of 3.205.

The coefficients of correlation were worked out to examine the relationship of 15 independent variables with the level of role performance of the respondents with regard to different role dimensions and also with regard to the level of overall role performance. In both the cases, 8 independent variables, viz., service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction were positively and significantly correlated with the level of role performance at 0.01 level whereas the variables role conflict and job anxiety were negatively and significantly correlated with the level of role performance at 0.01 level.

Multiple regression analysis was used to determine the contributory effects of selected independent variables in explaining the variation in the level of role performance of the respondents with respect to different role dimensions and also with respect to their level of overall role performance. Results of the regression analysis revealed that variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction, had positive and significant contribution towards explaining the variation in the level of role performance under different role dimensions. The variable job anxiety had negative and significant contribution towards the role performance under different role dimensions.

As regards overall role performance, the variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the overall role performance of the extension personnel at 0.01 level. The value of coefficient of multiple determination (R^2) being 0.825 indicated that the ten independent variables jointly could predict 82.50 per cent of the variation in the level of overall role performance of the extension personnel.

The technique of path analysis was employed to determine the direct and indirect effects of the selected independent variables on the level of role performance of the extension personnel. The results of path analyses revealed that the variable role awareness exhibited the highest direct effect on the level of role performance with respect to different role dimensions

followed by the variables role perception, job anxiety, service experience and role conflict. As regards to overall role performance, the maximum direct effect on the level of overall role performance was exhibited by the variables job anxiety (6.040) which was followed by the variables role awareness (3.824), service experience (2.947), role conflict (2.345) and attitude towards ATMA (1.731). The effect of the two exogenous variables namely 'service experience' and 'motivational climate' were channelized through different variables to ultimately affect the level of performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The variables role awareness exhibited the highest total effect on the level of performance which was followed by the variables role perception, job anxiety, service experience, and role conflict.

Positive and significant correlation with the level of role performance was found in case of service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction. However, negative and significant correlation was found with respect to role conflict and job anxiety. The effect of the two exogenous variables namely 'service experience' and 'motivational climate' were channelized through different variables to ultimately affect the level of performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of performance was exhibited by role awareness, followed by role perception, job anxiety, service experience, and role conflict.

Higher level of role performance is likely to impact positively on employees' and organization's well-being. The findings revealed that most of the extension personnel working under the revitalized extension system in Assam were young and middle aged and had medium level of service experience and training exposure to cope up with the changing agricultural scenario. The adequate exposure to professional training through capacity building will help to reorient the extension personnel with the new set of roles, their perception and performance. Care should also be taken to improve the motivational climate to increase the job satisfaction and achievement motivation which is evident from the direct and indirect relationships among these variables. The findings revealed that the current level of performance was medium to low. The level of role performance of extension personnel was influenced by a number of factors. The most crucial factors found to influence performance were role awareness, role perception, service experience, training exposure, attitude towards ATMA, achievement motivation, motivational climate, job satisfaction, job anxiety and role conflict. Hence it is important that efforts are made to ensure that extension personnel are aware of their roles, perceive their actions and behaviour properly and free from anxiety and conflicts while performing their roles. These findings can be useful in assisting extension administrators and managers in their endeavours to correct the weaknesses in the extension system and focus on the most crucial issues for the improvement of organizational performance.

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ABBREVIATIONS USED

ATMA	:	Agriculture Technology and Management Agency
BRC	:	Block Resource Centre
NATP	:	National Agricultural Technology Project
ITD	:	Innovation in Technology Dissemination
MoA	:	Ministry of Agriculture
GOI	:	Govt of India
SREP	:	Strategic Research and Extension plan
ATS	:	Agricultural Technology System
R-E	:	Research and Extension
KVKs	:	Krishi Vigyan Kendras
ZRSs	:	Zonal Research Stations
RARSs	:	Regional Agricultural Research Station
SDA	:	State Department of Agriculture
PRA	:	<u>Participatory</u> Rural Appraisal
BAP	:	Block Action Plan
BFAC	:	Block Farmers' Advisory Committee
CIG	:	Commodity Interest Group
AACP	:	Assam Agricultural Competitiveness Project
ADOs	:	Agricultural Development Officers
T&V	:	training and visit)
SSEPER	:	State Extension Programmes for Extension Reforms
SAMETI	:	State level agricultural extension management training institute
DoA	:	Department of Agriculture
MANAGE	:	National Institute of Agricultural Extension Management
EEIs	:	Extension Education Institutes
Fig.	:	Figure
viz.	:	Videlicet(namely)
MAO ©	:	Motivational Climate of Organization

CHAPTER I

INTRODUCTION

Agriculture is the main sector in the economy of many developing countries. Agricultural extension plays an important role in agricultural and rural development of those nations. Agricultural extension has a long history. The concept originated from the fields of adult education, development communication, rural development and community development. The whole extension process is dependent upon the extension agents, who are an important human resources group in the extension system¹. One of the most pertinent discussions in the extension system is the role of extension agents. There are four roles of extension agents which are namely process helpers, problem solvers, catalysts and resource linkers^{2,3,4}. As a whole, extension roles are helping the rural community in increasing the agricultural productivity by helping the rural producers in identifying their problems, finding solutions to the problems, educating the farmers in an informal way, linking the farmers with resources outside their community, and speeding up the dissemination of best practices from research centres to the community. Therefore, extension agents are important human resources in community development. The success of agricultural extension work depends on performance of the extension agents.

The first planned attempt of extension started in India with the launching of Community Development Programme in 1952, followed by the National Extension Service in 1953. These programmes were able to educate farmers to take up improved methods of farming across the country. The other important area-based special programmes were- Intensive Agricultural District Programme (IADP, 1960), Intensive Agriculture Area Programme (IAAP, 1964) and High Yielding Varieties Programme (HYVP, 1966).

¹FAO (2006)

²Havelock (1971)

³Ban and Hawkins (1988)

⁴Oladosu (2006)

The cumulative effect of these programs resulted in increased productivity, which made way to usher in '*Green Revolution*' in Indian agriculture during late 1970s. However, these programs widened gap between resource rich and resource poor farmers. In order to enable resource poor farmers to take benefit of improved farm technology, many client-based programs were introduced. The most important ones being; Small Farmers Development Agency (SFDA, 1969), Marginal Farmers and Agricultural Labourers Programme (MFAL, 1969), District Rural Development Agency/Society (DRDA, 1976), Integrated Rural Development Programme (IRDP, 1978) and Lab to Land Programme sponsored by ICAR (LLP, 1979). Although, these programs were able to improve the socio-economic conditions of beneficiaries, they were isolated in a given time and implemented in a phased manner. In the early part of 1980s it was observed that extension services in the developing countries were suffering from a number of weaknesses, including the dissipation of extension workers' energies on low priority tasks, the lack of single as well as clear line of command, and low level of agricultural knowledge and skill among field level functionaries. As a means of reforming and strengthening the extension service, a reorganized agricultural extension system known as 'Training and Visit' (T & V) system was introduced in the country.

This system was introduced in India in 1974 with the World Bank assistance. Training and Visit system became the dominant method of restructuring the extension services in over sixty countries in Asia, Africa and Latin America. The system aimed to achieve change in production technologies of farmers through professional assistance for the contact farmers from well trained extension personnel on agricultural research, supply, service and marketing facilities which were earlier lacking in National Extension Service. The important features of T & V system were : (1) Professionalism, (2) Single line of command, (3) Concentration of efforts, (4) Time-bound work, (5) Field and farmer orientation, (6) Regular and continuous training and (7) Linkage with research.

1.1 The starting point of revitalized extension system

The main weakness of T&V system was it largely remained as departmental program characterized by centralized operations with inadequate farmer driven and farmer-accountable feedback systems resulting in low level of farmers' involvement. The single discipline and single commodity oriented approach had serious

limitations in rainfed areas where holistic farming systems approach was required. This further lacked focus on location specific needs of regions, disadvantaged areas and target groups.

In country like India where Agro-climatic zones widely differ besides significant variation in socio-economic status of farmers', uniform extension service is not the panacea for all the regions. It was realized that public extension system will have to be placed in new decentralized institutional arrangements which are demand driven, farmer-accountable, bottom-up and have farming system approach. It has been realized that the public sector extension system on its own is not capable enough to meet the ever increasing and multi faceted demands of the farming community due to several constraints or weaknesses in the system. So, it was realized that the present public sector extension system should be restructured or reformed to meet the farmer's technological requirements. It was felt that extension system should be made broad-based and holistic by utilizing a farming system approach and involving various stakeholders.

Thus, to address the specific constraints, weaknesses and gaps in the present extension system, the National Agricultural Technology Project (NATP) was initiated by the Ministry of Agriculture, Govt. of India, with financial assistance from World Bank in November, 1998 (in 7 states covering 28 districts). The basic premise of NATP was that research and extension programmes should be farmer centered and demand driven. The overall objective of NATP was to revitalize the agricultural technology generation, assessment, refinement and dissemination system. Four types of institutional arrangements were made under NATP. These institutional arrangements included i) Establishment of decentralized district level autonomous institution named Agricultural Technology Management Agency (ATMA), ii) Establishment of extension planning and implementation units at block level named Farm Information and Advisory Centre (FIAC), iii) Establishment of state level agricultural extension management training institute named SAMETI and iv) Evolution of state level coordination and policymaking body named Inter-Departmental Working Group (IDWG).

The Innovation in Technology Dissemination (ITD) component of NATP aimed at addressing key constraints in technology generation, validation and dissemination by introducing certain institutional models and operational reform

processes in selected states in the country. The institutional arrangements were made through creation of ATMA as registered society at district level. The operational reforms are made through decentralized decision making by increasing the farmer's input into programme planning and resource allocation.

The main objectives of the revitalized extension system under NATP are:

- Providing innovative, restructured and autonomous institutions at the state/district/ block level.
- Encouraging multi-agency extension strategies involving Public/ Private Extension Service Providers.
- Ensuring an integrated, broad-based extension delivery mechanism consistent with farming system approach.
- Adopting group approach to extension in line with the identified needs and requirements of the farmers in the form of CIGs & FIGs;
- Facilitating convergence of programmes in planning, execution and implementation.
- Addressing gender concerns by mobilizing farm women into groups and providing training to them.
- Moving towards sustainability of extension services through beneficiary contribution.

1.2 The structural set up of the revitalized system

At District Level, ATMA is an autonomous institution set up at district level to ensure delivery of extension services to farmers. ATMA Governing Board (GB) is the apex body of ATMA which provides overall policy direction. ATMA GB is assisted by the District ATMA Cell comprising Project Director (PD) ATMA, Deputy PDs and Staff in the discharge of its functions. ATMA Management Committee is the executive body looking after implementation of the scheme. District Farmers Advisory Committee is a body to provide farmer's feedback for district level planning and implementation. With dedicated staff provided for the ATMA, it becomes the district level nodal agency responsible for overall management of agriculture extension system within the district, including preparation of Strategic Research and Extension Plan (SREP). Extension intervention is based on the Strategic Research and Extension Plan

(SREP) prepared after a Participatory Rural Appraisal (PRA) in each district. The Farm Information and Advisory Centre (FIAC) is the physical platform at the block level where farmers, members of the private sector, and extension field staff members from each line department meet to discuss, plan, and execute extension programs.

At the Block level, two bodies viz., Block Technology Team (BTT) (a team comprising officers of agriculture and all line departments within the block) and Block Farmers Advisory Committee (BFAC) (a group exclusively consisting of farmers of the block) function jointly (with the latter providing farmers' feedback and input). BFACs represent Farmer Interest Groups (FIGs) / Farmers' Organization (FOs) existing within the block on rotation basis to advise the BTT. The Block ATMA Cell consisting of these two bodies, Block Technology Manager (BTM) and Subject Matter Specialist (SMS) provide extension support within the Block, through preparation and execution of Block Action Plans (BAPs).

At Village level, Farmer Friend (FF) serves as a vital link between extension system and farmers at village level (one for every two villages). The FF is available in the village to advice on agriculture and allied activities. The FF mobilizes farmers' groups and facilitates dissemination of information to such groups, individual farmers and farm women directly through one to one interaction individually or in groups and also by accessing information / services on behalf of farmers as per need through Common Service Centres (CSC) / Kisan Call Centres (KCC). Input dealers and Agri-entrepreneurs supplement the efforts of extension functionaries by making quality inputs available to the farmers and by providing them critical technical advice. Farm Schools serve as a mechanism for farmer-farmer extension in every Block.

1.3 Statement of the problem

Extension in India is implemented at the state level, and public-sector agricultural extension provision still takes place through the state Department of Agriculture (DoA). The numbers and capacity of the staff vary greatly throughout the country, but it is well acknowledged that staff numbers are low, and the ratio of staff to farmers varies widely across the country (1:300 in Kerala, 1:2,000 in Rajasthan). Senior and mid-level extension staff are trained by the National Institute of Agricultural Extension Management (MANAGE), with four Extension Education Institutes (EEIs) providing regional-level training to mid-level functionaries working in the line

departments. Information is transmitted from the district and block extension staff to the village levels through contact farmers or para-extension workers.

Several emerging challenges confront Indian farmers. These include limited land and water availability, which is further exacerbated by degradation of natural resources; climate changes; changes in demand and consumption patterns, moving toward high-value agriculture; increasing population pressure; and liberalization of trade⁵. Recent global food price increases and high levels of inflation have provided an opportunity to increase farmers' profitability. However, to realize the benefit of higher prices, farmers need to access a wider range of information, related not only to production technologies but also to postharvest processes, access to remunerative markets, price information, and business development⁶. This information could be integrated with services that support the use of the information. In India, the role of agricultural extension in improving agricultural growth is today being recognized with increasing investment. India's 10th and 11th five-year plans emphasize agricultural extension as a key to increasing agricultural growth by reducing the yield gap in farmer fields, and therefore stress the need to strengthen agricultural extension in India⁷.

The effective implementation of 'ATMA' largely depends on how effectively the extension functionaries perceive their roles and perform those. The performance of the employee is the key to the success of most of the organizations and must be evaluated⁸. There is a strong necessity to determine the relationships between various independent variables and extension workers' performance. However, there have been less data on the perception and performance of roles by the extension workers in the country, even though there are sporadic studies on criticism that extension was not being able to produce the necessary changes in the rural community⁹. Therefore, there is a need first to gauge performance of extension workers and a need to determine predictors of their performance.

⁵ Lele *et al.*, (2010)

⁶ Sulaiman and van den Ban, (2003)

⁷ Planning Commission (2001, 2005, 2006)

⁸ Terry and Israel, (2004)

⁹ Sallam and Akram, (2005)

In Assam, the revitalized extension system started under the World Bank aided 'Assam Agricultural Competitiveness Project' (AACP) in 11 districts of Assam. Assam is situated in the North-East region of India, bordering seven States viz., Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal and two countries viz., Bangladesh and Bhutan. The study related to role perception and performance under revitalized extension system in India is very few. So it becomes very difficult to assess how well the extension functionaries are performing their roles and what are factors contributing their level of performance. In Assam, scientific study related to role performance of extension workers under revitalized extension system is very few. Keeping in view the importance of researchable issues, the study was conducted to measure the level of role performance of the extension functionaries along with its probable association with their socio-personal and organizational characteristics. It is in this background, the proposed study entitled "A study on the role performance of the Agricultural extension personnel in the Revitalized Extension System in the state of Assam" is undertaken with the following objectives.

1. To determine the level of role performance as perceived by the agricultural extension personnel in the revitalized extension system
2. To identify the variables which significantly contribute towards the level of role performance of the agricultural extension personnel in the revitalized extension system
3. To determine the direct and indirect effects of selected variables on level of role performance of the agricultural extension personnel in the revitalized extension system

1.4 Scope and importance of the study

The study can be considered as important from the following points of view:

1. The whole extension process is dependent upon the extension agents, who are an important human resources group in the extension system. The effectiveness of agricultural extension work depends on performance of the extension agents. The present study was focused on the level of role performance by the agricultural extension personnel in the revitalized extension system in the state. The relationship of some selected personal, psychological and organizational

variables with the level of role performance by the agricultural extension personnel were also examined in detail. The findings of the study shall add to the knowledge and insight of the planners and policy makers about the performance of various roles by the agricultural extension personnel in the revitalized extension system in the state which will provide useful guideline for designing effective organizational and management strategies for extension system.

2. The concepts and measures for the variables developed in the study shall be useful for research in agricultural extension and management.
3. It is hoped that the assessment of the level of performance by the agricultural extension personnel will help in making them more aware about their roles and expectations.

1.5 Limitation of the study

1. The constraints of time, resource and current socio-political situation compelled the investigator to confine the study to eleven districts of the state. Generalizations made from the findings, therefore, may be limited to those areas of Assam or elsewhere which have conditions similar to the study area.
2. Extension personnel from other allied departments were not included in the present study. The study was confined to only Agricultural extension personnel only, which may not depict a picture of the overall performance of the all the extension personnel.
3. The study was conducted based on the expressed opinion of the respondents. Therefore, possibility of error in recollecting and the effect of certain biases cannot be ruled out.

1.6 Organization of the thesis

The text of this thesis has been arranged in five chapters. The chapter I includes introduction, objectives of the study, scope and importance and limitations of the study. A review of relevant literature is incorporated in chapter II. The research methodology adopted in the study is presented in chapter III. The results and discussions are dealt in chapter IV. Finally chapter V contains the summary and conclusions. Bibliography and appendices are placed at the end of the thesis.

CHAPTER II

REVIEW OF LITERATURE

The resumes of relevant literature for the present study have been reviewed to gain insight into the scope and to provide guidance in designing and conducting the study. The resume of relevant literature for the purpose of the study has been taken from the researches done in India and abroad and those available to the researcher. A brief resume of the same has been presented under the following heads.

2.1. Concept of performance and role performance

2.2. Relationship between role performance and personal variables

2.3. Relationship between role performance and psychological variables

2.4. Relationship between role performance and organizational variables

2.1 Concept of performance and role performance

According to Oxford English Dictionary (2001), the meaning of performance is the accomplishment, execution, carrying out, working out of anything ordered or undertaken, the doing of any action or work.

Levine and Kantor (1962) emphasized that job performance of a worker depends on the fullest utilization of his abilities and also on the social expectation of the environment in which he works.

Schuster (1962) evaluated the performance of the business employees on six dimensions i.e., 'administrative', 'programmes', 'public reactions' 'finance' 'personal' and 'office management'.

Standard job performance refers to the extent to which a management employee fulfils organizationally prescribed work role expectations (Katz and Kahn, 1966).

Havelock (1971) identified four leadership roles of extension worker, namely, as a catalyst, solution giver, process helper and resource linker. This means that extension workers as leaders should raise the awareness of farmers, form functional farmers groups and

make decision for solution together with farmers. Extension workers, who possess the desire to lead, may enhance their skills and abilities required for the leadership role that might influence their performance and success

Goodale and Burke (1975) identified ten dimensions for measuring the performance of all business employees namely 'interpersonal relationship', 'organization and planning', 'reaction', 'reliability', 'communicability', 'adaptability', 'growth', 'productivity', 'quality of work' and 'teaching'.

Dunnette *et al.* (1976) found ten areas of job performance: knowledge, objectivity, alertness, commitment, initiative, persistence, detail mindedness, planning and organizing, communicating and working with others.

Kipnis and Grey (1976) included the following aspects in measuring the performance of supervisors and clerical employees in terms of 'ability', 'work attitude' and 'promotion and pay raises'.

Hackman *et al.* (1978) suggested 5 dimensions for measuring industrial employee's performance. These dimensions were 'skill variety', 'task identify', 'task significance', 'autonomy' and 'freedom from job'.

According to Dubrin (1978) performance is the result of the application of effort. Technically, performance refers to the multiplication of the efforts and ability.

The findings of Laharia (1978) reported that majority of agricultural scientists (61.00%) belonged to medium teaching productivity category in Harayana Agricultural University in Harayana state.

Kherde and Sahay (1979) defined role performance as the actual behavior of the incumbent. Role performance and role expectation are two important dimensions of role analysis. The dimension role expectation reflects the 'ought to do' or 'should do' part of the concept, whereas, the dimension role performance reflects the 'actually does of the role incumbent.

Janardhan (1980) measured job performance of agricultural extension officers on the aspects of 'education', 'evaluation', 'supply and service' and 'planning and supervision'.

Boyatzis (1982) defines competency as a cluster of related knowledge, skills and attitudes (KSAs) that affects one's job and job performance. This means that competencies can be seen as an observable performance or quality of the outcome of the extension agents'

performance. In this context, agriculture extension agents should consider expanding the use of competencies as a foundation for organizational change and improved performance.

Rao and Sohal (1982) measured the performance of veterinary extension officers on the six aspects of 'breeding', 'health cover', 'management', 'education', 'supervisory' and 'office work'.

Jhansi (1985) reported that most of the scientists of Andhra Pradesh Agricultural University (APAU) had medium level of research productivity in Andhra Pradesh.

Performance management focuses on ways to motivate employees to improve their performance. The goal of the performance management process is performance improvement, initially at the level of the individual employee, and ultimately at the level of the organization. The performance appraisal is a technique that has been credited with improving performance (Bagozzi, 1980; DeCarlo and Leigh, 1996) and building both job satisfaction and organizational commitment (which has been related to lower levels of turnover) (Babakus *et al.*, 1996; Babin and Boles, 1996; Brown and Peterson, 1994; Churchill *et al.*, 1985).

McLagan (1989) identified 11 roles of Human Resource Development (HRD) professionals: administrator; evaluator; HRD manager; HRD materials developer; individual career-development adviser; instructor or facilitator; marketer; needs analyst; change agent; programme designer and researcher to be played by extension agents. As such, agriculture extension can be seen as part of the field of HRD and is regarded as extremely vital in encouraging change processes at the organization and community levels.

Schermerhorn *et al.* (1990) that is, employees' performance is the product of their ability, the support received to adequately perform their job, and the motivation to perform at high levels.

Job demands on management employees typically constitute a broad variety of role obligations. Yuki *et al.* (1990) identified no fewer than 14 categories of management behaviours: informing, consulting, planning and organizing, problem solving, clarifying, monitoring, motivating, recognizing, supporting, conflict management and team building, networking, delegating, rewarding and mentoring.

Performance can be viewed in two forms in-role and extra-role. In role performance is about the actions of the employee that fulfill its requirements according to his job description whereas extra-role performance is about the action that is outside the formal requirements regarding his role. Open communication as well as participatory leadership is positively related with the employee performance regarding both roles. Such practices enhance

employee's job satisfaction level and ultimately higher performance according to his roles. Performance level of any organization is increased when that organization has well-managed, well-defined and strong culture (Heck and Marcoulides, 1993).

Campbell *et al.* (1993) argued that procedural knowledge cognitive skill, psychomotor skill, physical skill, self-management skill and inter-personal skill are the most important determinants of job performance.

Radhakrishna *et al.* (1994) emphasised that the leadership role of extension workers has become an increasingly critical element in the successful performance of extension programmes.

Ashton (1996) found that competencies were effective predictors of job performance which is also supported by theoretical implication of Vroom's expectancy theory (1995).

Halakatti and Sundaraswamy (1998) and Padmavathi *et al.* (1998) also revealed that majority of the agricultural assistants and Mitra Kisans had a medium level of job performance.

"Performance deals with the outcomes, results and accomplishments achieved by a person, group or organization". Performance can be viewed from several vantage points; including the organizational level, the work or process level and the individual performer level." Organizational level analysis focus on the organizational ability to meet the customer's needs, compete in the market, carry out the strategies related to the organization and achievement of the goals. Work or the process level analyzes the internal system and related processes to achieve the organizational goals. Individual performer level is related to the people that are performing activities related to work; these people contribute to the overall performance of the organization (William and Rothwell, 2000).

Linder (2001) found that the correlation between competency and performance was strong and significant. This shows that competencies lead to confidence of the agriculture extension workers as leaders to control over their work and, hence, flexibility and creativity to achieve the desirable performance.

Ahlam (2001) while studying on the competencies needed for effective extension agents in the Republic Arab of Egypt, confirmed that there was a relationship between performance of agricultural extension workers and the competencies in programme planning, extension programme implementation and extension programme evaluation at the community level.

Dhanakumar (2001) found that possession of competencies and self-abilities by extension agents had a positive impact on their quality performance in the extension delivery system in India.

Performance appraisal may be defined as an effort concerned with enriching attitudes, experiences, and skills that improves the effectiveness of employees (Boswell and Boudreau, 2001).

Lindner and Dooley (2002) noted that effective performance requires the application of related knowledge and helps for acquisition of new knowledge.

According to Bray and Brawley (2002), role performance effectiveness indicates how effectively individuals perform in a given role. They found that an individual's belief in his or her own capabilities to perform effectively in a role influenced performance effectiveness.

Maity (2002) reported that most of the Livestock Development Assistants were identified as medium performer by self rating, superior rating and beneficiary rating approach.

According to Terry and Israel (2004), employee performance is a key to the success of most organizations and, therefore, must be evaluated. They suggest that extension agents must develop and maintain skills in assessing and responding to the needs of clientele, which can ensure that clientele receive the most current and accurate information.

Performance appraisal has increasingly become part of a more strategic approach to integrate HR activities and business policies and may now be seen as a generic term covering a variety of activities through which organizations seek to assess employees and develop their competence, enhance performance and distribute rewards. Thus, both practice and research have moved away from a narrow focus on psychometric to developmental performance appraisal (Levy and Williams, 2004).

Armstrong (2006) highlighted that competencies are factors that contribute to high levels of individual performance. According to him, to get better results from the teams or individuals working in the organization within an agreed time of the framework of the already planned goals, competency requirement and standard is performance management

According to K-STATE (2006), performance review is an important, ongoing process to enhance extension agent effectiveness. A set of work quality and productivity of performance standards in extension work includes eight elements, namely, quality of work, dependability, work schedule, work habits, work allocation, poise and composure, work organization and customer satisfaction.

Vijayaragavan and Singh (2006) assert that performance is a process of evaluating employees in carrying given tasks in order to guide and develop their potential.

Measuring job performance is a process of determining how closely a record of behaviors and/or outcomes that could have been achieved during a period and then assigning it a corresponding value. The ultimate goal of performance appraisal should be to provide information that will best enable managers to improve employee performance. Thus “Performance appraisal” is a discrete, formal, organizationally sanctioned event, usually not occurring more frequently than once or twice a year, which has clearly stated performance dimensions and/or criteria that are used in the evaluation process (Angelo *et al.*, 2006).

Performance is an account of how agents (individuals groups, departments, organizations, nations, continents or whatever) under certain circumstances, manage to get from state A to state B, the latter being in some way better than the former”. Appraisal practices shifted from personality to goal settings and assessment of the abilities related to the performance. Performance Appraisal became an essential mechanism towards managing people and business (Jirasinghe, 2006).

Godara *et al.* (2006) in a study to measure the productivity of extension scientists in the Chaudhary Charan Singh Haryana Agricultural University, Hisar find out that the quantitative and qualitative productivity status of extension scientists was medium.

Performance is generally discussed within the contexts of leader behaviour, motivation, task design, goal setting, and most other primary areas of organisational research. For example, the term performance is widely used in all fields of management using terms such as performance management measurement and evaluation or appraisal (Armstrong, 2006). It has been widely accepted that effective organisations require effective leadership and that organisational performance will suffer in direct proportion to the neglect of this (Dubrin, 2007).

In a study carried out in 14 institutions under the control of University of Agricultural Sciences, Dharwad in Karnataka it was found that most of the teachers (86.57%), and extension workers (80.95%) and majority of the researchers (71.43%) were found to have medium level of job perspective. Majority of the teachers (70.15%),

researchers (59.52%) and extension workers (66.67%) were found in the medium level of teaching productivity category. It was noticed that 79.11 per cent of teachers, 71.43 per cent of researchers and 66.67 per cent of extension workers belonged to medium level of research productivity category (Manjunath and Shashidahra, 2011).

Maiti *et al.* (2011) conducted a study in Purba Medinipur district of West Bengal to appraise the role performed by the Pranibandhus (field level stakeholder of Public-Private-Partnership model of veterinary services in West Bengal) by three different approaches namely self-rating, beneficiary-rating approach and superior rating approach. It was found that majority of the Pranibandhus were average performer in overall role performance and in each area of performance.

Performance evaluation serves a number of purposes. One purpose is to help management make general human resource decisions. Evaluation provides input into important decisions such as promotions, transfers and terminations. Evaluations also identify training and development needs. They pinpoint employee's skills and competencies that are currently inadequate but for which remedial programs can be developed. Evaluations also fulfill the purpose of providing feedback to employees on how the organization views their performance (Aftab *et al.*, 2012).

Deshpande *et al.* (2013) reported that most of the gram panchayat members (68.33%) had 'medium' level of role performance in agricultural development programmes followed by 16.67 per cent and 15.00 per cent of respondents with 'low' and 'high' role performance, respectively.

2.2 Relationship between role performance and personal variables

Redhukar (1963) while studying the relationship of certain personal attributes to the success of Village Level Workers (V.L.W) in Bombay found that there is a positive relationship between the performance of V.L.Ws and their age.

Crane (1966) reported that scientists who were having higher training exposure were more likely to perform better.

Sengupta (1966) reported that a village level extension worker with rural background had a better chance to be effective.

Singh and Srivastava (1970) reported that majority of the Agricultural Extension officers in Kanpur who obtained formal training perceived their role as educational,

where as tenure of service was found to have no relationship with their role perception and performance.

Curvilinear relationships between age and work performance was reported by Kelleher and Quirk, (1973) for peoples associated with the sale of products.

Rao (1974) reported that unmarried workers were more satisfied than married workers and hence they performed better.

Sandhu (1976) reported a positive and significant relationship between service experience and job performance.

Perumal and Rai (1977) found no significant correlation between job performance of agricultural extension officers and their age.

Wallunj (1977) observed a significant association between role performance of the members of gram panchayat and their characteristics like education and service experience.

Patil (1978) found that the variables like education, service experience were significantly associated with productivity of the village level extension workers from Kolhapur district. He further reported that village level extension workers of more than 41 years old had high level of role performance.

Zende (1979) observed that age and service experience had no influence on productivity of village level extension workers.

Intodia and Shaktawat (1980) found that there was no association between age of the respondents and role perceived and role performed by Sarpanch (Chairman of Gram Panchayat) in Rajasthan. They also found significant association between performance and education.

Anand (1980) in his study found a positive and significant relationship between service experience and job performance.

Kaur and Bhatnagar (1980) reported that education, service experience had positive and significant relationship with age and rural-urban background had negative relationship with the performance of extension workers.

Sanoria and Singh (1980) found positive and significant relationship between performance of the researchers with educational achievements, total experience of extension and rural family background.

Singha (1982) reported that workers who were not married were more satisfied than married workers and hence they perform better.

Kaur (1983) also found a positive and significant relationship between service experience and job performance.

Jagdale (1985) found that that age, marital status, family type and decision making ability have no association with performance.

Factors like higher educational qualification, more number of training received and their attitude towards research and income had positive and significant relationship with the level of performance of the scientists of APAU in Andhra Pradesh (Jhansi, 1985).

Kuruna (1986) while studying the scientists and extension worker's productivity found that age was mildly related to scientists and extension worker's performance

Talukdar and Laharia (1986) while studying the Agricultural Development Officers' (ADOs) performance found a significant association of age, education and service experience with performance.

Rani and Reddy (1987) reported that education and age had positive and significant correlation with performance.

Sharma *et al.* (1988) while studying the role expectation and role performance of Rural Agricultural Extension Officers (RAEOs) of T&V system in Madhya Pradesh found that the role performance of RAEOs was significantly and positively related with age.

Van den Ban and Hawkins (1988) noted that extension agents' external contact ability also significantly affects the desired result and increase the effectiveness of extension work.

Kulkarni and Kulkarni (1989) analyzed the tasks performed by Village Extension Workers (V.E.Ws) in T & V system and found that the profile of the respondents like number of villages, area under jurisdiction and training were negatively and significantly related with the tasks performed by them.

Reddy and Singha (1989) reported that age, level of education had significant and positive relationship with the job satisfaction and performance of the respondents.

Hegde and Channegowda (1989) while studying the influence of personal characteristics of agricultural assistants on their job performance found that age, education,

communication methods used, mass media exposure and level of training had no relationship with the job performance of the agricultural assistants.

Sharma *et al.* (1988) found that there was a negative relationship between age and performance of Rural Agricultural Extension Officers. However, they found a positive relationship between their performance and educational qualification, job satisfaction and service experience.

Ray (1990^a) found negative and significant relationship between decision making ability and level of role performance.

Mass media exposure and level of education were reported to have positive and significant relationship with the role perceived and performed by the panchayat members (Ray, 1990^b).

Balasubramanian and Perumal (1991) while studying the job performance and characteristics of fisheries extension personnel found that age, education, experience, training exposure, rural background had positive and significant relationship with the job performance.

Karim and Mahboob (1992) found that job performance of the SMS increased with their better academic achievement, more technical education and better supervisor relationship.

Reddy *et al.* (1992) found that age, education and experience had negative significant relationship with job performance of Agricultural Extension Officers (AEOs).

Sharma (1992) reported that education, social participation and innovation proneness had positive and significant association with both role perception and performance. It was also found that age, political affiliation had positive and significant association, while extension contact had negative and significant association with their gap between role perception and role performance.

Gogoi and Talukdar (1993) showed that variables like age, marital status and education had positive significant association with performance of agricultural scientists.

Trade *et al.* (1995) reported that educational qualification, extension contact and mass media exposure were significantly associated with the role performance of local leader in agricultural development.

Vanclay and Lawrence (1995) suggested that more emphasis needs to be placed on enhancing social skills of agricultural extension workers to improve the impact of extension work.

Kumari *et al.* (1997) found that age, education level, mass media exposure, training attended and rural urban background had a positive and significant relation with performance of extension personnel.

Madukwe (1998) found that there was no relationship between age and performance. It indicated that effectiveness of job performance did not depend on their age.

Finding of a research conducted by Riggon *et al.* (2000) showed that possession of social competence led to good prediction of work performance. Agricultural extension workers also need to be experts in communications skills as well as in science and technology.

Awasthi *et al.* (2001) found in a similar study that age, education, service experience and job performance showed positive correlation. This result indicated that service experience is an important factor in performing a job.

Khare (2001) found positive significant correlation between the role performance and social participation.

Rathi *et al.* (2004) showed that the education, caste, contact with extension agent, cosmopolitaness and experience had positive and significant relationship with the role performance of panchayat leaders towards village development activities.

Godara *et al.* (2006) revealed that productivity of the extension scientists in the Chaudhary Charan Singh Haryana Agricultural University, Hisar had a positive and significant relation with, mass media exposure, training attended and rural-urban background.

Long and Swortzelow (2007) reported a positive correlation between age of agricultural extension workers and their work performance.

Gunbayi (2007) reported that young teachers seemed to appreciate the value of their job and seemed to be more positive and committed in their work as compared to the older ones.

Thach *et al.* (2007) reported high correlation between social skill of agricultural extension workers and their work performance. Furthermore, they indicated that among all individual factors, social skills were the strongest contributor in explaining the extension workers' performance.

The outcome of the result conducted by Das *et al.* (2010) revealed that ‘utilization of information source’ and ‘agricultural training received’, had positive and significant relation with the retailing performance of the input retailer.

Khalge *et al.* (2010), explicitly depicted that the variable age, caste and training exposure had non-significant relation with the role performance of members of gram panchayat, whereas level of education, was positively and significantly related with the role performance of members of gram panchayat.

The variables such as farming experience and mass media use had significant positive relationship with the performance of rapeseed, mustard and bajra cultivation (Yadav *et al.*, 2010).

Maiti *et al.* (2011) found that educational status, experience, communication in the organization, self perception about job responsibility and mass media exposure were the main contributory characteristics of Pranibandhus (field level stakeholder of Public-Private-Partnership model of veterinary services in West Bengal) to their overall role performance.

Deshpande *et al.* (2013) reported on the basis of multiple regression analysis, that mass media exposure played important role in determining awareness and role performance of gram panchayat members about agricultural development programmes.

Verma *et al.* (2013) reported that the education, gender and cosmopolitaness, has positive significant relationship with the level of job performance at 0.05 level of probability. However age, caste, and experience had no significant relation with the job performance of the village panchayat leaders.

2.2 Relationship between role performance with psychological variables

Murray (1962) found a significant and positive relationship between the levels of performance and achievement motivation.

Vroom (1962) found that a direct relationship between job involvement and performance which may exist only for jobs requiring valued and possessed abilities, but involvement may be an important moderator between satisfaction and performance for a wide range of jobs.

Taylor *et al.* (1963) found a non significant relationship between the performance and motivation.

Equity theory (Adams, 1963; Adams, 1965 and Mowday, 1991) suggests that perceptions of fairness are a job-related motivational base that can influence the behavioural and affective responses of job performers. According to equity theory, employees evaluate the exchange relationships with the organizations they are affiliated with in terms of a ratio between effort spent and rewards received at work.

Lodahl and Kejner (1965) while studying the relationship of job involvement and performance for a sample of engineers found no significant relationship between the two variables.

Litwin and Stringer (1968) reported that motivation results in various consequences for the organisation namely satisfaction, productivity or performance.

Lawler and Hall (1970) pointed out that the quality of job performance may be more likely to be related to attitudinal variables, such as job involvement than to the quantity of job performance.

Bhatnagar (1971) showed that there exist a wide gap between role expectations and role performance which can be narrowed down by providing training. He reported that training is positively and significantly associated with role performance.

Muthayya and Kannon (1973) reported a positive and significant relationship between the performance of the development personnel with achievement motivation.

It is quite natural that those who involve more in their role, identify themselves with their job and perform them better (Siegal and Ruh, 1973).

Atkinson *et al.* (1974) found positive and significant relationship between agricultural scientists' productivity with that of achievement motivation.

Biesanz and Biesanz (1974) pointed out that role performance is affected by degree of compatibility or conflict with other roles and latitude of the role's interpretation. Role performance is also affected by the performer's degree of internalization of norms and by the degree of enforcement of sanctions by other.

Reddy (1976) reported a positive and significant relationship between the workers' performance and their achievement motivation.

Dubrin (1978) mentioned in his book "Human Relations: A Job Oriented Approach" that an optimum amount of stress can improve job performance whereas, an overload of stress can impair performance.

The findings of Laharia (1978), Reddy (1982) revealed that the achievement motivation of agricultural scientists was found to have positive and highly significant relationship with their level of scientific productivity.

Laharia (1978) found that level of aspiration had negative correlation with performance.

However, Janardhana (1979) reported that achievement motivation is not significantly related with the work performance.

Mahipal and Rai (1980) found that the role performance of the co-operative society leaders was positively and significantly correlated with their attitude, interest and cooperation.

Job involvement has been defined as an individual's psychological identification or commitment to his / her job (Kanungo, 1982).

Prasad (1983) pointed out that the productivity of the farmers was significantly related to achievement motivation of the farmers.

Laxmidevi and Venku Reddy (1984) while studying the role expectation and role performance of rural women in farm activities found that there is negative relationship between role expectation and role performance of the rural women.

Jagdale (1985) found that the factors like attitude towards professional qualities like knowledge level, initiative and responsibility had significant association with job performance.

Reddy (1986) and Sundaraswamy (1987) revealed that there is a positive and significant relationship between achievement motivation and role performance of agricultural scientists.

Rani and Reddy (1987) found non-significant relationship between the performance and achievement motivation.

Sundaraswamy (1987) reported a positive relationship of role involvement with the level of performance.

Reddy and Jayaramaiah (1990) found achievement motivation has positive and significant correlation with level of extension workers performance.

Halkatti (1991) in his study revealed that there is a positive and significant relationship between performance and role involvement.

Dubinsky *et al.* (1993) reported that increases in role clarity can affect both the effort/performance expectancy and performance/reward instrumentality estimates. Thus, by reducing ambiguity, performance appraisals may positively influence the levels of motivation exhibited by employees.

Keaveney and Nelson (1993) in testing a complex model of the interrelationship among numerous attitudes (intrinsic motivation orientation, role conflict, role ambiguity, psychological withdrawal), found a non significant relationship with job performance.

Bhuyan (1995) reported significant and positive relationship of role awareness and attitude towards extension work with job performance.

Mwangi and McCaslin (1995) pointed out that an employee would work harder and perform better if the person was motivated and satisfied with the jobs. In addition, it is hard for extension agents to serve their clients well without adequate staff incentives, where the incentives would motivate them.

Brown and Leigh (1996) argued that one reason for the weak and inconsistent relationship between job involvement and performance might be that job involvement was more likely to affect performance indirectly through other variables. This study revealed that organizational commitment would link job involvement with performance.

Agunga *et al.* (1997) highlighted that motivation was the single most important determinant of performance and the overall job performance of a worker was a function of his/her ability plus motivation.

Agarwal (1998) showed that job performance of extension personnel had negative but significant correlation with job involvement.

Fried *et al.* (1998) found that role ambiguity influenced supervisor rated performance and that those employees with high levels of role ambiguity were associated with lower levels of performance effectiveness.

Tubre and Collins (2000) established a negative relationship between role ambiguity and performance among individuals whose roles were characterized by a high level of task interdependence compared to individuals whose work was performed independently.

Fisher (2001) found that role ambiguity was negatively related to auditors' job performance.

Lassak *et al.* (2001) in a study to measure 'salesperson job involvement' find out a significant but positive relationship between involvement and performance.

Kumar (2001) and Letson *et al.* (2001) explained that psychosocial characteristics of farmers directly influenced their decision making behaviour and hence affected their role performance. Regression analysis showed that innovativeness, achievement orientation and risk orientation contributed positively and significantly towards decision making behavior and performance.

Eys and Carron (2001) reported that a lack of role clarity (i.e., high ambiguity) among basketball players was related to lower levels of task cohesiveness within the team.

Bray and Brawley (2002) found that an individual's ability to better understand how to perform the formal functions demanded by his or her role helped the employee to perform better at work.

Diefendorff *et al.* (2002) found a small but significant correlation between job involvement and role performance

Rynes *et al.* (2002) found that one of the highest percentages of HR professionals responding contrary to the research facts was to the statement "Ensuring employees participate in decision making is more important for improving organizational performance than setting performance goals".

Hansen *et al.* (2004) reported a positive and significant relationship of achievement motivation, innovativeness and risk orientation with the level of role performance.

Godara *et al.* (2006) revealed that productivity of the extension scientists in the Chaudhary Charan Singh Haryana Agricultural University, Hisar had a positive and significant relation with aspiration.

Devroop and Devroop (2006) described that occupational aspirations were the jobs that individuals would ideally prefer or like to have while occupational expectations were the jobs that individuals realistically expect to obtain while accounting for realities of the job market.

Burney and Widener (2007) found that role ambiguity was negatively related to managerial performance in strategic planning and decision making areas.

Chaudhary (2007) defined the level of aspiration as an individual's future expectation, which is the standard measure by which a person judges his performance as good or bad.

Rotenberry and Moberg (2007), using the same measure of job involvement as Diefendorff *et al.* (2002), reported a weak but significant positive correlation between job involvement and in-role performance.

When role ambiguity is high, there is sufficient room to interpret the job requirements, leading to varying standards of performance among similar group of individuals and, in turn, reduced performance (Yun *et al.*, 2007; Burney and Widener, 2007; Marginson, 2006).

Lee and Rojewski (2009) opined that aspirations are important to career development and occupational attainment as they prompt planning, guide learning, help organize life options and choices, and contribute to individual's preparation for adult life.

Bosselut *et al.* (2010) studied French rugby players and found that athletes who reported lower role ambiguity pertaining to responsibilities and behaviours reported higher levels of task cohesion.

Sluss *et al.* (2011) reported negative correlation between role performance and role ambiguity.

Manjunath and Shashidahra (2011) indicate a positive and significant association between job involvement and achievement motivation of Agricultural Scientists with their level of scientific productivity.

Sharma *et al.* (2014) revealed that the majority of Rural Agricultural Extension Officers possessed medium level of job performance. The important problems faced by the respondents were lack of residential quarter, lack of vehicle, low economic and financial condition, administrative problems and problems related to geographical areas.

2.3 Relationship between role performance and organizational variables

Human Relations perspective indicates that satisfied workers are productive workers (McGregor, 1960 and Likert, 1961). Thus, organizational productivity and efficiency is achieved through employee satisfaction and attention to employees physical as well as socio emotional needs.

Vroom (1964) found that job satisfaction was positively associated with

job performance. In fact human relations might be described as attempts to increase productivity by satisfying the needs of employees.

Cornblit (1970) while studying the factors affecting performance stated that insufficient allocation and shortage of funds, scarcity of trained personnel, scarcity of facilities, low level of scientific communication, low efficiency of public administration and institutional and staff instability were the major factors effecting performance.

Schwab and Cummings (1970), based on a study of five organizations, concluded that instead of trying to maximize satisfaction in organizations, organizations should pay attention to the requirement that high performance be rewarded by satisfying such higher order needs as self-actualization and autonomy. The accuracy of performance evaluation in organizations varies inversely with the rank being evaluated. The higher one moves in an organization, the more problematic and ambiguous performance appraisal becomes.

Kolte (1972) reported that the feelings of either satisfaction or dissatisfaction were determined by the achievement of the aims of promotion and salary which ultimately affect the performance of the employees.

Laharia (1978) found that job satisfaction and interpersonal communication had high positive correlation with performance. The result of path analysis revealed that job satisfaction had maximum direct influence, while the effects of other variables were negligible.

Reddy (1978) while studying the relationship between socio-psychological characteristics and the job effectiveness of VLEW found that job satisfaction and the attitude towards extension work were having positive and significant relationship with job effectiveness. The characteristics like service experience and training had no association with job effectiveness.

Sanoria and Singh (1980) found positive and significant relationship between performance of the researchers and their job satisfaction.

Srivastava and Singha (1981) found a positive and significant relationship between job anxiety and job performance.

Reddy (1982) found that there was no significant association between organizational climate and role performance.

Petty *et al.* (1984) conducted a meta-analysis on empirical studies of job performance and job satisfaction which used the Job Description Index and were conducted after Vroom's review in 1964. They identified 15 studies of the relationships between job performance and job satisfaction that were included in Vroom's review. The meta analysis of these studies showed that the average correlation between job satisfaction and job performance for all studies included was 0.14 while the variance of correlation was 0.0107 and the sampling error variance was 0.0043.

Jagacinski and Nicholls (1984) studied the influence of the motivational climate on conceptions of ability. They argued that a task involvement conception is likely to occur in situations that de-emphasize extrinsic incentives, reward improvement, and encourage or reward trying hard, whereas an ego involvement conception is likely to occur in situations characterized by social comparison of skills, interpersonal competition and winning

Jagdale (1985) found that work environment components like job satisfaction, communication, local leadership and adjustment had significant association with job performance.

The findings of Talukdar (1984), Reddy (1986), Sundaraswamy (1987) and Hallkatti (1991) revealed that organizational climate had a positive and highly significant relationship with the performance of the extension personnel.

A study conducted by Singh (1985) revealed that the dimensions of organizational climate viz., aloofness, production emphasis, thrust, consideration, disengagement, esprit, intimacy, and hindrance had significant correlation with high, average and low performance school.

Podsakoff and Williams (1986) found that the general satisfaction-job performance relationship was somewhat stronger in studies in which rewards were linked to performance (mean $r = 0.27$) than in studies where there was no performance-pay contingency (mean $r = 0.17$).

According to activation theory, there will be inverted U-shaped relationships between job demands and both job performance and job satisfaction (Gardner, 1986; Gardner and Gummings, 1988).

Jobs with low demands provide low activation levels and jobs with high demands provide high activation levels. Given that job demands result in different activation levels, the prediction of curvilinear demand-response relationship is straightforward. That is, job performance and job satisfaction are predicted to decline in proportion to the degree to which a

job performer's experienced activation level negatively or positively deviates from the characteristic activation level owing to job underload and job overload, respectively (Gardner and Cummings, 1988).

The positive cultural characteristics of an organization were found to enhance performance in proportion to the power of their demonstration (Saffold, 1988).

Organ (1988) suggests that the failure to find a strong relationship between job satisfaction and performance is due to the narrow means often used to define job performance. Organ argued that when performance is defined to include important behaviours not generally reflected in performance appraisals, such as organizational citizenship behaviours, its relationship with job satisfaction improves.

Shore and Martin (1989) found that when regressing supervisory ratings of job performance on job satisfaction and organizational commitment, job satisfaction explained more incremental variance in the performance of professionals.

A growing stream of research showed workplace fairness perceptions to be an important determinant of the behavioural and affective responses of job performers (e.g., Moorman, 1991; Mowday, 1991; Organ and Moroman, 1993; Konovsky and Pugh, 1994).

Champoux (1992) examined how job contextual factors such as pay satisfaction and supervisory satisfaction influenced the curvilinear relationships between job complexity and affective outcomes. Drawing on an equity theory framework, the study showed how perceptions of job effort reward fairness as a job-contextual factor have moderate inverted U-shaped relationships between quantitative job demands and both job performance and job satisfaction among managers. That is, managers who were fairly rewarded for their efforts appeared to respond more positively to intermediate demand levels than managers who were under rewarded by their organization.

The link between organizational culture and organizational performance is like cause-effect relationship, which implies that organizational performance is effect of organizational culture (Heck and Marcoulides, 1993).

As noted by Brown and Peterson (1994), if the effect of job performance on job satisfaction is insignificant, firm actions designed to increase job performance should not have a direct effect on job satisfaction and related outcomes like employee turnover.

Judge and Hulin (1993) found that while motivation, job involvement, organizational citizenship behaviour, organizational commitment, life satisfaction, mental

health, and job performance had positive correlation with employee satisfaction, absenteeism, turnover, and perceived stress showed negative relation with employee satisfaction. Employees were more loyal and productive when they were satisfied and these satisfied employees influenced the customer satisfaction and organizational productivity (Hunter and Tietjen, 1997).

Although the research studies on organizational climate have used slightly different definitions and measures of climate, they all seem to agree that climate refers to a systematic phenomenon that pervades an organization and its parts and influences an individual's performance on the job (Shadur *et al.*, 1999).

Recognition of an employee's hard work is essential to his or her satisfaction in the workplace (Kaye and Jordan-Evans, 1999). Letting employees in on the decision making processes gives those employees a feeling that their opinions are respected and that they hold a place of importance within the company which will ultimately affect the performance of the organization.

Hartmann (2000) has considered job satisfaction a more appropriate dependent variable than managerial performance in studies on performance evaluation.

Fisher (2001) said that there is no reason to expect a single measure of performance to be related to overall satisfaction. What should be strongly related to job satisfaction is a multiple-act, multiple-observation measure of variety of work behaviours.

Judge *et al.* (2001) found strong correlation between job satisfaction and job performance of higher complex job.

In a unique study conducted by Harter *et al.* (2002), based on 7,939 business units in 36 organizations, the researchers found positive and substantive correlations between employee satisfaction-engagement and the business unit outcomes of productivity, profit, employee turnover, employee accidents and customer satisfaction.

Rooney (2003) opined that when the needs of the subordinates are met, they would be able to do their work smoothly and improve their job performance.

Patterson *et al.* (2004) suggested employee affect as mediator between organizational climate and company performance and found that the relation between organizational climate and company performance was mediated by job satisfaction.

Branham (2005) in his study found that one quarter to one half of all workers was feeling some level of dysfunction due to stress, which was having a negative impact on

their productivity and the probability that they would stay with their employers. Lack of communication in the workforce was a major contributor to dissatisfaction. This was usually the result of managerial staff that was isolated and did not know how to relate to their employees on a personal or professional level. Bad communication left employees feeling disconnected from the organization. This was detrimental to the wellbeing of the company because when an employee felt neglected, he or she would tend to perform at a lower level.

Payne (2005) indicated that high performing employees were more skilled at communicating empathy, adapting their communication and managing interactions with others than lower performing employees.

The Texas A & M University System (2005) found that social skills of extension agents such as establishing effective working relationships with co-workers, colleagues, supervisors, volunteers, clientele and key community leaders were important in determining performance.

There is no limit for the employees to reach the full satisfaction and it may vary from employee to employee. Sometimes they need to change their behaviours in order to execute their duties more effectively to gain greater job satisfaction (Miller, 2006).

Godara *et al.* (2006) revealed that productivity of the extension scientists in the Chaudhary Charan Singh Haryana Agricultural University, Hisar had a positive and significant relation with organizational health, communication credibility and supervisory style. Job stress exhibited negative and significant association with the overall productivity.

In terms of the relationship between organizational climate and teachers' job performance, Adeyemi (2008) found that there was a significant relationship between organizational climate and teachers' job performance.

Moyes *et al.* (2008) defined employee's satisfaction as how pleased an employee was with his or her position of employment and performance.

Raza and Arid (2010) examined the impact of organizational climate on performance of college teachers in Punjab. The results of their study revealed that the principals perceived the esprit behavior of teachers and production emphasis behavior of principals were correlated to teachers' job performance. Teachers who were overloaded with clerical tasks unrelated to teaching might not be able to show high level of job performance.

Bryson *et al.* (2010) focused on the influence of employee earnings on job satisfaction and job anxiety in the private sector. They found evidence of a positive relationship

between earnings and job anxiety robust to detailed controls for the nature of work, effort and workplace performance.

Value is created by satisfied, loyal and productive employees. Employees who feel a sense of teamwork and common purpose, a strong commitment to communication, and managerial empowerment are most able, and willing, to deliver the results that customers expect (Employee Satisfaction, 2011).

Manjunath and Shashidahra (2011) found that the organizational variable such as organizational climate as perceived by agricultural scientists and job satisfaction had a positive and highly significant relationship with their overall scientific productivity.

Kurbett and Badiger (2014) in a study conducted on 30 women officials of Karnataka State Department of Agriculture found that they were satisfied with a salary, working conditions and recognition.

CHAPTER III

RESEARCH METHODOLOGY

The research methods and procedures adopted for conducting this study are explained in this chapter under the following heads.

- 3.1 Locale of the study
- 3.2 Method of sampling
- 3.3 Selection and measurement of variables
- 3.4 Tools and techniques of data collection
- 3.5 Formulation of hypotheses
- 3.6 Statistical analysis and interpretation of data

3.1 Locale of the study

The present study was conducted in Assam, one of the states of North-eastern India, lying between 24° to 28°18' north latitudes and 89°50' to 97°4' east longitudes. The state has an area of 78,523 square kilometers, which accounts for about 2.4 percent of the country's total geographical area. Assam has a total population of 31,169,272 (as per 2011 census) which accounts for about 2.58 per cent of the country's total population. Total cropped area is 3.9 million hectares and about 68 per cent is rice cropped area. The major soils of Assam belong to inceptisols (49.3%), entisols (32.3%), alfisols (12.3%) and ultisols (6.1%). Assam soil is mostly acidic with pH of the soils generally ranging from 4.2 to 5.8. Organic matter content of majority of soils is medium to high, and the available N, P₂O₅ and K₂O content of the soils of Assam varies between medium and low (Anonymous, 2009).

3.2 Method of sampling

A multistage purposive sampling method was followed for selection of the respondents of the study.

Fig. 3.2.1

Fig. 3.2.2

3.2.1 Selection of the Districts

At present there are 27 districts in Assam. Out of these, 11 (eleven) districts were purposively selected for the study. These 11 districts were purposively selected because Agricultural Technology Management Agency (ATMA) was first constituted in these districts under the World Bank aided Assam Agricultural Competitiveness Project (AACCP). It was assumed that the extension personnel from these districts may have greater experience and exposure towards ATMA than those who have formed later as ATMA districts. A map of Assam showing the sampled districts and a sampling plan of the study are shown in Fig. 3.2.1 and Fig. 3.2.2, respectively.

3.2.2 Selection of Agricultural Development Blocks

There were 115 agricultural development blocks in the 11 ATMA districts selected for the study. All these agricultural development blocks were covered under the study.

3.2.3 Selection of the respondents

A Block Resource Centre (BRC) is constituted in each block of ATMA district with institutional arrangements for technology demonstration and dissemination. Agricultural Development Officers (ADOs) who have worked as conveners in the respective BRCs of the sampled districts were selected as respondents for the study. Thus 115 ADOs from 11 ATMA districts were selected as respondents for the study. However, in spite of repeated attempts, 3 (three) ADOs could not be contacted for personal interview and hence dropped from the sampling frame. Finally, 112 ADOs from 11 ATMA districts constituted the sample of respondents for the study.

3.3 Selection and measurement of variables

3.3.1 Selection of variables

A detailed description of the variables selected for this study and empirical measurement has been dealt with here. Selection of the variables included in the study was done on the basis of review of pertinent literature and discussion with experts of the concerned disciplines. Only those variables which had relevance with the study were finally selected. The conceptual definitions and details of the procedures followed for measurement of the variables are described in the sub sections to follow. The list of selected variables and their empirical measures is presented in Table 3.3.1.

3.3.2 Dependent variable

The present study was concerned with the level of role performance as perceived by the agricultural extension personnel in the revitalized extension system in Assam. Thus the level of role performance of the agricultural extension personnel was selected as dependent variable for the study. The conceptual definitions and procedure followed for measurement of this variable is described hereunder.

3.3.2.1 Level of role performance by the extension personnel

According to Oxford English Dictionary (2001), the meaning of performance is the accomplishment, execution, carrying out, working out of anything ordered or undertaken, the doing of any action or work.

According to Dubrin (1978) performance is the result of the application of effort. Technically, performance refers to the multiplication of the efforts and ability.

One of the pioneer researchers who conceptualized the term “performance” was Vroom (1964) who suggested an equation to picture performance and he narrated that it is a product of personal “ability” and “motivation” of an individual or $\text{performance} = \text{ability} \times \text{motivation}$. Vroom’s model explains that an individual who is thought to be highly motivated would not be able to perform a job well if he does not possess relevant knowledge, skills and attitudes (KSAs). In other words, both ability and motivation are essential ingredients to good employee performance. The formula to determine performance as drawn above can be implemented at various fields such as management, education, and organizational behaviour.

The role performance in the study has been operationally defined as the view points or opinions of the respondents on the list of role items identified under each of the seven role dimensions, namely. ‘Planning’, ‘Organizing’, ‘Staffing’, ‘Directing’, ‘Coordinating’, ‘Reporting’ and ‘Budgeting’ in the study area as being performed or not performed with respect to their position as an Agricultural Development Officer (ADO). Thus, the role performance reflects the ‘actual does’ part of the role incumbent.

Table 3.3.1. Variables selected for the study and their measurement

Sl.No.	Variables	Empirical measures
(A)	Dependent variables	
	Level of role performance as perceived by the extension personnel	Performance index developed for the study
(B)	Independent variables	
B1	Personal variables	
1	Age (X_1)	Structured schedule
2	Educational qualification (X_2)	Structured schedule
3	Service experience (X_3)	Structured schedule
4	Training exposure (X_4)	Structured schedule
B2	Psychological variables	
1	Decision making ability (X_5)	Decision making ability scale developed by Ray (1990 ^b)
2	Role awareness of the extension personnel (X_6)	Structured schedule
3	Role perception of the extension personnel (X_7)	Structured schedule
4	Job involvement of the extension personnel (X_8)	Job involvement scale developed by Lodahl and Kejner (1965)
5	Role conflict of the extension personnel (X_9)	Role conflict scale developed by Rizzo <i>et al.</i> (1970)
6	Role ambiguity of the extension personnel (X_{10})	Role ambiguity scale developed by Rizzo <i>et al.</i> (1970)
7	Attitude of the extension personnel towards ATMA (X_{11})	Scale developed for the study
8	Achievement motivation of the extension personnel (X_{12})	Achievement motivation scale developed by Banerjee (1996)
B3	Organizational variables	
1	Motivational climate (X_{13})	MAO (C) scale developed by Pareek (1981)
2	Job satisfaction of the extension personnel (X_{14})	Job satisfaction scale developed by Wanous and Lawler (1977)

3	Job anxiety of the extension personnel (X_{15})	Job anxiety scale developed by Srivastava and Singha (1981)
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The different role dimensions considered in the study are mentioned below (adopted from Gulick, 1936).

- **Planning:** Working out the board outline the things that need to be done and the methods for doing them to accomplish the purpose which is set for the enterprise.
- **Organizing:** The establishment of the formal structure of authority through which work subdivisions are arranged, defined and coordinated for the defined objective of the organization.
- **Staffing:** The whole personnel function of bringing in and training the staff and maintaining favorable conditions of work. Both qualitative and quantitative.
- **Directing:** The continuous task of making decisions and embodying them in specific and general orders and instructions and serving as the leader of the enterprise.
- **Coordinating:** Interrelating the various entities and processes of the work.
- **Reporting:** Keeping those to whom the executive is responsible as well as subordinates informed through records, research and inspections.
- **Budgeting:** With all that goes with budgeting in the form of planning to ensure sources of income, accounting and control on expenditures.

Development of a standardized index to measure the level of role performance as perceived by the extension personnel

A standardized index was developed in the present study to measure the level of role performance as perceived by the extension personnel following the procedure followed by Sharma *et al.* (2012). The procedure followed for development of the index is described in the following paragraphs.

1. Collection of items

Seventy statements, expressing the role items of extension personnel in the revitalized extension system were collected from available literature, ATMA guideline 2010, researchers and experts in the field of extension. In order to maintain uniformity, these role items were then categorized under seven role dimensions with equal number of role items under each dimension. Thus there were ten role items under each role dimension. These items were edited on the basis of criteria suggested by Thurstone (1946), Likert (1932) and Edward (1957). Finally, a total of 56 role items were retained having eight items under each role dimension.

2. Selection of judges

A total of 60 Judges comprising of experts in the field of Extension Education of Assam Agricultural University, Extension Education Institute, Jorhat, Nagaland University and field experts of ATMA were selected.

3. Judges' ratings / opinion

The judges' rating was primarily used to ascertain the role items under various dimensions. The selected 56 role items were sent to 60 judges through self-addressed envelope. The judges were requested to evaluate these role statements on a three point continuum, viz., '*Most Relevant*' (*MR*), '*Relevant*' (*R*) and '*Less Relevant*' (*LR*). A score of 3, 2 and 1 were given for MR, R and LR, respectively. Finally, the responses of 50 judges were taken into consideration that fulfilled the following criteria: (1) Completeness (2) Response within the time frame. Accordingly, ten responses were rejected, which were not complete. Thus, the relevancy data furnished by 50 judges were taken into consideration for arriving at the selection of role items for the index.

4. Selection of items for the final index

The responses obtained from judges were tabulated for each role item under three response categories and appropriate score was assigned for each item. The following procedure was followed for consolidating the scores assigned.

The ratings for each response by the judges were utilized for the calculation of 't' values under each role item. The response to each item was considered as a rating score and the scores were summed up for all items.

From the total score, the frequency distribution of scores was considered, which was based on the responses to all items. Then, 25 percent of the items with the highest total

score and 25 percent of the items with the lowest total score were taken, which provided the criterion groups to evaluate the individual item. The relevancy test (RT) was carried out using the formula:

$$RT = \frac{[(MR \times 3) + (R \times 2) + (LR \times 1)]}{56 \times 3}$$

Where,

MR =Most Relevant

R =Relevant

LR =Least Relevant

If the value of RT was more than 0.75 percent for a statement, it was considered for inclusion in the index. The 't' value for each item was worked out using the formula:

$$t = \frac{\bar{X}_H - \bar{X}_L}{\frac{\sqrt{\sum (X_H - \bar{X}_H) \times (X_L - \bar{X}_L)}}{n(n-1)}}$$

Where,

$$\sum (X_H - \bar{X}_H) = \frac{\sum X_H^2 - (\sum X_H)^2}{n}$$

$$\sum (X_L - \bar{X}_L) = \frac{\sum X_L^2 - (\sum X_L)^2}{n}$$

$\bar{X}_H$ =The mean score on given statement of the high group

$\bar{X}_L$ = The mean score on given statement of the low group

$\sum \bar{X}_H^2$ = Sum of squares of the individual score on a given statement for high group

$\sum X_L^2$ = Sum of squares of the individual score on a given statement for low group

$\sum X_H$ = Summation of scores on given statement for high group

$\sum X_L$ = Summation of scores on given statement for low group

n = Number of respondents in each group

$\sum$ = Summation

The value of 't' is a measure of the extent to which a given item differentiates between the high and low group. After calculating the 't' values, items were arranged in rank order according to their 't' values. Finally 42 items with the largest 't' values were selected for the performance index. The 't' values of different items included in the final index are presented in the Appendix-II

The final index to measure the level of role performance of the extension personnel consisted of 42 role items. Before measuring 'performance' of a particular role item, a filter question (Did you perform?) was asked to check whether a particular role item was performed or not. If the response to this question was positive, the role items were then administered for evaluating the perceived level of regularity and quality in performing those role items. Two columns on the right hand side of the role items with questions such as "How Regularly?" and "How Well?" were put for this purpose. The answers to the question "How Regularly?" was administered on three point continuum ranging from "regularly", "sometimes" and "never" and the scores assigned were 2, 1, 0, respectively. The answers to the question "How Well?" was administered on four point continuum with categories ranging from "very well", "well", "somehow" and "poor" and the scores assigned were 3, 2, 1 and 0, respectively. The total score of each respondent was calculated by summing the scores obtained by him/her on the two dimensions, i.e. Regularity and Quality of performance.

The score on role performance of a respondent was worked out by summing the score received by him/ her on the two dimensions against each role item. The scores on each of the 6 items under each role dimension were worked out for all the respondents separately. Mathematically, performance level of a respondent on a given role dimension can be expressed as follows.

$$P.I. = \sum R_i + \sum Q_i$$

Where,

$\sum$ = Summation

R_i = Score on Regularity in performing different roles ($i= 1, 2, \dots, 6$)

Q_i = Score on Quality in performing different roles ($i= 1, 2, \dots, 6$)

P.I.= Performance Index

The total score for a given role dimension obtainable by a respondent ranged from 0 to 30. Thus the total score on this index ranged from 0 to 210. The higher score indicates that respondent had higher level of role performance and *vice-versa*.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low level of performance	Up to $\bar{X} - 1$ S.D.
Medium level of performance	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High level of performance	Above $\bar{X} + 1$ S.D.

Ranks were given to each role items under each role dimension based on the weighted mean score to find out the level of role performance. The highest rank of the role item in the rank order under each role dimension means the highest perceived level of role performance.

3.3.3 Independent variables

After review of relevant literatures available to the investigator and consulting the experts, 15 independent variables were selected for the study. For convenience of the study, the independent variables were categorized into three categories, namely 'Personal variables', 'Psychological variables' and 'Organizational variables'. Out of 15 variables, age, educational qualification, service experience, and training exposure were classified as personal variables, decision making ability, role awareness, role perception, job involvement, role conflict, role ambiguity, attitude towards ATMA and achievement motivation as psychological variables and motivational climate, job satisfaction and job anxiety as organizational variables. The conceptual definitions and procedure followed for measurement of each of these variables are described hereunder.

3.3.3.1 Age

Age refers to the chronological age of the respondents and was measured by the numbers of years completed by the respondents at the time of interview. The respondents were categorized as follows.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below.

Category	Score range
Young aged	Up to $\bar{X} - 1$ S.D.
Middle aged	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
Old aged	Above $\bar{X} + 1$ S.D.

3.3.3.2 Educational Qualification

It refers to the level of literacy or formal education received by the respondents. It is worth mentioning here that the minimum qualification for agriculture development officers is B.Sc (Agri). Hence, three categories were selected as B.Sc. (Agri.), M.Sc. (Agri.) and Ph.D (Agri.). For correlational analysis the scores were assigned to these categories as follows.

Category	Score
B.Sc (Agri)	1
M.Sc (Agri)	2
PhD (Agri)	3

3.3.3.3 Service Experience

Service experience refers to the number of years completed by a respondent in his service at the time of interview, starting from the date of joining in the service. It was measured in years rounded off to the nearest year and one score was assigned for each completed year.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Short experience	Up to $\bar{X} - 1$ S.D.
Medium experience	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
Long experience	Above $\bar{X} + 1$ S.D.

3.3.3.4 Training Exposure

Here, training exposure refers to the number of days a respondent has undergone training during the last 5 years on functioning of ATMA. It was measured in days rounded off to the nearest day and one score was assigned for each completed day.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low training exposure	Up to $\bar{X} - 1$ S.D.
Medium training exposure	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High training exposure	Above $\bar{X} + 1$ S.D.

3.3.3.5 Decision making ability

It is the degree to which an individual shows his ability for selection of most efficient means in order to perform some acts after considerations of some factors (Ray, 1990^b).

For measurement of this variable, a scale developed by Ray (1990^b) was used. The scale containing 8 statements was put on a 5 point continuum viz., Very Important, Important, Somewhat Important, Less Important and Not Important with scores of 5, 4, 3, 2 and 1, respectively. The total score on this scale ranged from 8 to 40.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low	Up to $\bar{X} - 1$ S.D.

Medium	$\bar{X} -1 \text{ S.D. to } \bar{X} +1 \text{ S.D.}$
High	Above $\bar{X} +1 \text{ S.D.}$

3.3.3.6 Role awareness

In this study, role awareness of respondents refers to the consciousness about his set of roles which are expected to play in performing their different jobs.

For evaluation of role awareness of respondents, the standardized role items used for measuring role performance were administered to the respondents to obtain responses in terms of “Aware” and “Not aware” against each role item. Scoring was done by putting ‘1’ for ‘Aware’ and ‘0’ for “Not aware”. The total score on this scale ranged from 0 to 42.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low role awareness	Up to $\bar{X} -1 \text{ S.D.}$
Medium role awareness	$\bar{X} -1 \text{ S.D. to } \bar{X} +1 \text{ S.D.}$
High role awareness	Above $\bar{X} +1 \text{ S.D.}$

3.3.3.7 Role perception

According to International Dictionary of Management (1986), Role perception means “How a person sees his or other people’s role in particular situation”.

According to Ray (1990^a), perception is an activity through which an individual become aware of objects around him and of events taking place. Perception of the same situation may differ from individual to individual due to differences in their experiences and cognitive styles.

For evaluation of role perception of respondents, the standardized role items used for measuring role performance were administered to the respondents on a four point continuum viz., Most important, Important, Somewhat important and Not important with scores of 3, 2, 1 and 0, respectively. The total score on this scale ranged from 0 to 126.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low role perception	Up to $\bar{X} - 1$ S.D.
Medium role perception	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High role perception	Above $\bar{X} + 1$ S.D.

3.3.3.8 Job involvement

According to Lodahl and Kejner (1965), job involvement is the degree to which a person is identified psychologically the importance of his work in his total self image. It is the degree to 'which one is cognitively preoccupied with, engaged in, and concerned with one's present job.

In the present study, it was measured by using the scale developed by Lodahl and Kejner (1965). The job involvement scale had 14 statements which were administered to the respondents on a five point continuum ranging from "Strongly agree" to "Strongly disagree" through "Agree", "Undecided" and "Disagree". The scores assigned to the positive statements were 5, 4, 3, 2 and 1, respectively and for negative statements 1, 2, 3, 4 and 5, respectively. The total score on this scale ranged from 14 to 70.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low job involvement	Up to $\bar{X} - 1$ S.D.
Medium job involvement	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High job involvement	Above $\bar{X} + 1$ S.D.

3.3.3.9 Role conflict

Role conflict has been defined by Sell *et al.* (1981) as incongruity of the expectations associated with a role. Role conflict is also defined in terms of the congruency of

various job responsibilities, i.e., the degree to which goals, objectives, and responsibilities of a position conflict with one another (Rizzo *et al.*, 1970).

In the present study, role conflict was measured with slight modification of the scale developed by Rizzo *et al.* (1970). The final role conflict scale had 11 statements which were administered to the respondents on a five point continuum ranging from “Strongly agree” to “Strongly disagree” through “Agree”, “Undecided” and “Disagree”. The scores assigned to the positive statements were 5, 4, 3, 2 and 1, respectively and for negative statements 1, 2, 3, 4 and 5, respectively. The total score on this scale ranged from 11 to 55.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low role conflict	Up to $\bar{X} - 1$ S.D.
Medium role conflict	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High role conflict	Above $\bar{X} + 1$ S.D.

3.3.3.10 Role ambiguity

Role ambiguity is defined as the lack of information available to perform one's responsibilities effectively (Kahn *et al.*, 1964). Individuals experiencing role ambiguity lack adequate information about what their responsibilities are and insufficient information about the process to accomplish these responsibilities. First, the expectations need to be known, and secondly, knowledge of activities required to fulfill those expectations is also needed (Kahn *et al.*, 1964). In the present study role ambiguity was conceptualized in terms of the outcome expected from individuals and the clarity of the behavioural requirements that need to be fulfilled to meet those outcomes (Rizzo *et al.*, 1970).

Role ambiguity was measured with the scale developed by Rizzo *et al.* (1970) with 11 statements which was administered to the respondents on a five point continuum ranging from "Strongly agree" to "Strongly disagree" through "Agree", "Undecided" and "Disagree". The scores assigned to the positive statements were 5, 4, 3, 2 and 1, respectively and for negative statements 1, 2, 3, 4 and 5, respectively. The total score on this scale ranged from 11 to 55.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low role ambiguity	Up to $\bar{X} - 1$ S.D.
Medium role ambiguity	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High role ambiguity	Above $\bar{X} + 1$ S.D.

3.3.3.11 Attitude of the extension personnel towards ATMA

Attitude in this present investigation has been defined as an enduring system of positive and negative evaluation, emotional feelings and pros and cons action tendencies with respect to social objects (Krech *et al.*, 1962). In this comprehensive definition, attitude consists of three components *viz.*, cognitive, affective and connotative.

'Attitude of the extension personnel towards ATMA' was measured with the scale developed by the investigator for the study by following the method of summated rating as suggested by Likert (1932).

Construction of scale to measure respondent's attitude towards ATMA

The following procedure was followed for constructing the scale to measure the attitude of extension personnel towards ATMA.

1. Collection and editing of statements: Sixty statements, expressing the attitude of the extension personnel towards ATMA were collected from available literature, ATMA guideline 2010, extension researchers and experts in the field of extension. These items were edited on the basis of criteria suggested by Thurstone (1946), Likert (1932) and Edward (1957).

Out of the 60 statements, 50 statements were retained after editing. These statements were found to be non ambiguous and non-factual.

2. Relevancy test: All the statements collected may not be relevant equally in measuring the extension personnel's attitude towards ATMA. Hence, these statements were subjected to scrutiny by an expert panel of judges to determine the relevancy and screening for inclusion in the final scale. For this the list of fifty statements was then sent to panel of 60 judges. Judges comprised of experts in the field of Extension Education of Assam Agricultural University, Extension Education Institute, Jorhat, Nagaland University and field experts of ATMA.

The statements were sent to 60 judges with request to critically evaluate each statement for its relevancy to measure the attitude of the extension personnel towards ATMA. Judges were requested to give their response on a five point continuum viz., highly relevant, relevant, neutral, irrelevant and highly irreverent with scores 5, 4, 3, 2 and 1, respectively. Out of 60 judges, only 40 responded in a time span of one month. The relevancy score of each item was determined by adding the scores on rating scale for all the 40 judges' response. For this relevancy percentage, relevancy weightage and mean relevancy scores were worked out for all the statements by using the following formulae.

- a) **Relevancy percentage (R.P):** Relevancy percentage was worked out by summing up the scores of highly relevant, relevant and neutral categories, which were converted into percentage.
- b) **Relevancy weightage (R.W):** Relevancy weightage was determined by the formula.

$$RW = \frac{HRR + RR + NR + IR + HIR}{MPS}$$

Where,

HRR = Highly relevant response

RR	=	Relevant response
NR	=	Neutral response
IR	=	Irrelevant response
HIR	=	Highly irrelevant
MPS	=	Maximum possible score

c) **Mean relevancy score (M.R.S)** : It was determined by the following formula

$$MRS = \frac{HRR + RR + NR + IR + HIR}{N}$$

Where,

HRR	=	Highly relevant response
RR	=	Relevant response
NR	=	Neutral response
IR	=	Irrelevant response
HIR	=	Highly irrelevant
N	=	Number of judges

Using these three criteria, the statements were screened for their relevancy. Accordingly statements having relevancy % >70, relevancy weightage >0.70 and mean relevancy score >3.5 were considered for final selection of statements. By this process, 40 statements isolated and were suitably modified and rewritten as per the comments of judges.

3. Calculation of ‘t’ value (item analysis) : These 40 statements were subjected to item analysis to delineate the items based on the extent to which they can differentiate the respondents with highly favourable attitude than the respondents with less favourable attitude towards ATMA. For this 40 extension personnel were selected from non sample area. The respondents were asked to indicate their degree of agreement or disagreement with each statement on a five point continuum ranging from “Strongly agree” to “Strongly disagree” through “Agree”, “Undecided” and “Disagree”. The scores assigned to the positive statements were 5, 4, 3, 2 and 1, respectively and for negative statements 1, 2, 3, 4 and 5, respectively.

Based upon the total scores, the respondents were arranged in descending order. The top 25 per cent of the respondents with their total scores were considered as the high group

and the bottom 25 per cent as the low group. These two groups provided criterion groups in terms of evaluating the individual statement as suggested by Edwards (1957). Thus out of the 40 extension personnel to whom the items were administered for the item analysis, 10 extension personnel with lowest scores and 10 with highest scores were used as criterion groups to evaluate individual statements.

The critical ratio, that is the 't' value which is a measure of the extent to which a given statement differentiates between the high and low groups of the respondents for each statement was calculated by using the formula suggested by Edward (1957).

$$t = \frac{\bar{X}_H - \bar{X}_L}{\frac{\sqrt{\sum (X_H - \bar{X}_H) \times (X_L - \bar{X}_L)}}{n(n-1)}}$$

Where,

$$\sum (X_H - \bar{X}_H) = \frac{\sum X_H^2 - (\sum X_H)^2}{n}$$

$$\sum (X_L - \bar{X}_L) = \frac{\sum X_L^2 - (\sum X_L)^2}{n}$$

$\bar{X}_H$ = The mean score on given statement of the high group

$\bar{X}_L$ = The mean score on given statement of the low group

$\sum X_H^2$ = Sum of squares of the individual score on a given statement for high group

$\sum X_L^2$ = Sum of squares of the individual score on a given statement for low group

$\sum X_H$ = Summation of scores on given statement for high group

$\sum X_L$ = Summation of scores on given statement for low group

n = Number of respondents in each group

$\sum$ = Summation

4. Selection of attitude statements for final scale

After calculating the 't' values, statements were arranged in rank order according to their 't' values. Finally 20 statements with the largest 't' values were selected for the scale. The 't' values of different statements included in the final scale are presented in the Appendix-III.

The final attitude scale with 20 statements was administered to the respondents on a 5 point continuum ranging from “Strongly agree” to “Strongly disagree” through “Agree”, “Undecided” and “Disagree”. The scores assigned to the positive statements were 5, 4, 3, 2 and 1, respectively and for negative statements 1, 2, 3, 4 and 5, respectively. The total score of this attitude scale ranged from 20 to 100.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Less favourable attitude	Up to $\bar{X} - 1$ S.D.
Favourable attitude	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
Highly favourable attitude	Above $\bar{X} + 1$ S.D.

3.3.3.12. Achievement motivation

Motivation can be defined as the driving force behind all the actions of an individual. The influence of an individual's needs and desires both have a strong impact on the direction of their behavior. There are different forms of motivation including extrinsic, intrinsic, physiological, and achievement motivation. Achievement motivation can be defined as the need for success or the attainment of excellence. Individuals will satisfy their needs through different means, and are driven to succeed for varying reasons both internal and external. Achievement motivation is based on reaching success and achieving all of our aspirations in life. Achievement goals can affect the way a person performs a task and represent a desire to show competence (Harackiewicz *et al.*, 1997).

McClelland (1961) referred to achievement motivation as spontaneously expressed desire to do something well for its own sake rather than to gain power or love or recognition or profit. In the present study achievement motivation was conceptualized as the respondents' concern to excel in his/ her field and direct his/ her behavior accordingly in order to pursue the goal (Banerjee, 1996).

In this study, the achievement motivation of the respondents was measured by using the scale developed by Banerjee (1996). This scale consisting of 20 statements was administered to the respondents on a five point continuum, i.e. ‘Strongly agree’, ‘Agree’, ‘Undecided’, ‘Disagree’, ‘Strongly disagree’. The scores assigned to these categories were 5, 4, 3, 2 and 1, respectively. The total score on this scale ranged from 20 to 100.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Low achievement motivation	Up to $\bar{X} - 1$ S.D.
Medium achievement motivation	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High achievement motivation	Above $\bar{X} + 1$ S.D.

3.3.3.13 Motivational Climate

According to Pareek (1981), motivational climate is the general culture of the organization characterized by dominant psychological needs (motives). It is the environment prevailing in the organization which specifically activates, energizes, direct an employee towards the achievement of organizational and personal goals.

For measuring this variable in the present study, the MAO (C) scale developed by Pareek (1981) was used. The scale consisted of 10 organizational dimensions, viz., Orientation, Interpersonal relationship, Supervision, Managing problems, Managing mistakes, Managing conflicts, Communication, Decision making, Trust and Managing rewards. Each dimension consisted of 6 statements, thus making a total of 60 statements in the scale.

The six statements in each dimension expressed six types of motivation. Respondents were requested to give rank to the six statements of each dimension in order of their dominance prevailing in their organization. Rank I should be given to the statement which closely describes the situation and rank VI should be given to the statement which describes the situation least. The scores assigned to these ranks (I, II, III, IV, V and VI) were 6, 5,4,3,2 and 1 respectively. The total score on this scale ranged from 60 to 360.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Less favourable climate	Up to $\bar{X} - 1$ S.D.
Favourable climate	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
Highly favourable climate	Above $\bar{X} + 1$ S.D.

3.3.3.14. Job satisfaction

According to Nancy (1997) satisfaction refers to the level of fulfilment of ones needs, wants and desire. Satisfaction depends basically upon what an individual wants from the world, and what he gets. Maslow (1943) viewed job satisfaction in terms of the degree to which the work situation results in fulfillment of the needs or certain values of the individual possess. Employee satisfaction is a measure of how happy workers are with their job and working environment. Effective organizations should have a culture that encourages the employee satisfaction (Bhatti and Qureshi, 2007).

In the present study, job satisfaction was conceptualized as the degree of satisfaction or dissatisfaction towards the job itself and the factors directly affecting the role performance in the organization (Wanous and Lawler, 1977). The more individual's expectations are met on the job, the greater his satisfaction (Porter and Steers, 1973).

In the present study job satisfaction was measured by using the job satisfaction scale developed by Wanous and Lawler (1977). The scale had 6 dimensions with a total of 22 statements which were administered to the respondents on a five point continuum ranging from 'Very much satisfied' to 'Very much dissatisfied' through 'Satisfied', 'Least satisfied' and 'Dissatisfied' with scores 5, 4, 3, 2 and 1, respectively. The total score on this scale ranged from 22 to 110.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below :

Category	Score range
Less satisfied	Up to $\bar{X} - 1$ S.D.
Moderately satisfied	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
Highly satisfied	Above $\bar{X} + 1$ S.D.

3.3.3.15 Job anxiety

According to Webster Dictionary (2008), job means "a piece of work of a definite extent or character, especially one done in the course of one's profession or occupation or a piece of work to be done".

Anxiety means "disturbance of mind towards some uncertain event, misgiving worry, strained or solicitous desire as for some object or purpose, eagerness".

The term job anxiety was conceptualized as quiet and silent feeling of the extension personnel pertaining to the various constituents of their job such as job security, recognition and fair evaluation, human relation at work, future prospects, capacity and confidence to shoulder job responsibilities.

In order to measure this variable, a scale developed by Srivastava and Singha (1981) was used. The scale had 7 dimensions with a total of 16 statements. The scale was administered on two point continuum with categories “Yes” and “No” to measure the positive and negative feelings of the respondents regarding their seven constituents of job life. A score of 1 was allotted towards the positive response (Yes) and a score of 0 was allotted towards the negative response(No) of the statements. The total score on this scale ranged from 0 to 16.

Based on the mean ($\bar{X}$) and standard deviation (S.D.) of the obtained scores, respondents were classified into three categories as shown below:

Category	Score range
Low job anxiety	Up to $\bar{X} - 1$ S.D.
Medium job anxiety	$\bar{X} - 1$ S.D. to $\bar{X} + 1$ S.D.
High job anxiety	Above $\bar{X} + 1$ S.D.

3.4 Tools and techniques of data collection

3.4.1 Tools of data collection

The major tool used for collection of primary data in the study was a structured schedule as given in Appendix I. The structured schedule was prepared in accordance with the objectives of the present study to collect pertinent and relevant information from the respondents.

3.4.2 Pre testing of the schedule

The purpose of the pre-testing was to identify ambiguities, misunderstandings and inadequacies in the schedule, to determine the time taken to complete the schedule and to ensure that the language used was suitable (Ary *et al.*, 2002). The schedule prepared for the present investigation was pretested about a month before final data collection in a non sampled area of Golaghat, Sivsagar and Lakhimpur Districts of Assam. For pre-testing a group of 20

extension officers were interviewed. On the basis of information obtained through pre-testing, necessary modifications were made in the body of the interview schedule so as to make it more convenient.

3.4.3 Reliability and Validity of Measurements

According to Anastasi (1968), reliability refers to the consistency of scores obtained by the same individuals when re-examined with test on different occasions, or with different sets of equivalent items, or under variable examining conditions. The reliability of a measurement logically pertains to the proportion of the true variance in a test or scale. It refers to the degree to which a measuring instrument yields consistent scores when it is administered a number of times. Validity refers to the degree to which an instrument measures what it is supposed to measure (Intrinsic validity; Guilford, 1978). The reliability and validity co-efficient in respect to some of the measurement scales used in the present study were calculated as described in the following paragraphs.

3.4.3.1 Calculation of reliability scores

The reliability of the scales used in the study was worked out by using ‘split-half’ (odd-even design) method. In this method, each scale was divided into two parts by keeping items with odd serial numbers in one part and those with even serial numbers in the second part. The co-efficients of reliability were worked out by using two different formulae for different measurement scales. The formulae are given below.

Rulon’s formula (1939): The formula given by Rulon (1939) gives the reliability of total test scores which follows closely the basic definition of reliability, i.e., that reliability is the proportion of true variance in a test or alternatively it is equal to unity minus the proportion of error variance. The formula used is given below.

$$r_{tt} = 1 - \frac{S_d^2}{S_t^2}$$

Where r_{tt} = reliability of the total scores

‘d’ = difference between the half scores for a respondent obtained by odd even design

S_d = standard deviation of those differences

S_t = standard deviation of total scores

Horst's Formula (1951): When the two parts of the scale were of unequal length, in that case reliability co-efficient was worked out by using this formula. To apply this formula, the correlation co-efficient between scores of two parts of the scale was calculated and then the reliability co-efficient for the total scale was worked out. The Horst's formula is given below.

$$r_{tt} = \frac{r\sqrt{r^2 + 4pq(1-r^2)} - r}{2pq(1-r^2)}$$

Where, r_{tt} = reliability of sum of the two parts

r = correlation co-efficient between two parts

p =proportion of total scale or test devoted to one part

$q = 1-p$

3.4.3.2. Calculation of validity scores

According to Guilford (1978), the definition of intrinsic validity can also be stated in terms of how well the obtained scores measure the instrument's true score components. This validity as used in the present study is indicated by the square root of its reliability.

$$\text{Validity} = \sqrt{r_{tt}}$$

The reliability and validity estimates of some of the measuring instruments obtained by using the above mentioned formulae are presented below:

Table 3.4.1 Reliability and validity co-efficient of measuring instruments

S. N.	Measuring instruments	Formula used	Co-efficient of reliability (r_{tt})	Co-efficient of intrinsic validity ($\sqrt{r_{tt}}$)
1	Level of role performance of extension personnel	Rulon (1939)	0.675	0.821
2	Decision making ability	Rulon (1939)	0.792	0.889
3	Role involvement	Rulon (1939)	0.874	0.934
4	Role conflict	Horst (1951)	0.679	0.824
5	Role ambiguity	Horst (1951)	0.759	0.871
6	Achievement motivation	Rulon (1939)	0.875	0.935
7	Motivational climate	Rulon (1939)	0.754	0.868

8	Job satisfaction	Rulon (1939)	0.839	0.915
9	Job anxiety	Rulon (1939)	0.757	0.870
10	Attitude of the extension personnel towards ATMA	Rulon (1939)	0.756	0.869

3.4.4. Technique of data collection

The primary data in the present study were collected directly from the respondents with the help of the structured schedule through personal interview method. The interview schedule was taken to each of the respondents by the investigator. After establishing rapport, questions contained in the schedule were explained to each respondent and the responses received were recorded by the investigator. Every effort was made to clarify the questions by repetition in simple language if needed to get an objective and correct response. The respondents were assured that their responses and background information would be kept strictly confidential and that would be used for the present research purpose only.

3.4.5 Period of data collection

All the interviews were conducted at the respondents' places of posting. All the data from the respondents were collected during the period from March to July, 2014.

3.5 Formulation of Hypotheses

In the context of the statistical analysis, a set of explicit hypotheses were formulated in the present study. In general, testing of hypotheses was done on the basis of null hypotheses in view. The hypotheses presented herein were the verbal statements of null hypotheses (Ho). On the basis of available theoretical supports, the directions of relationship were predicted in stating the alternative hypotheses (Ha).

Hypothesis No. 1: The selected sets of personal, psychological and organizational variables have no significant relationship with the level of role performance of the extension personnel.

Here, $H_o : r_i = 0$

$H_a : r_i \neq 0$ ($P = 0.05$)

Where, r_i = Coefficients of correlation between the independent and dependent variables

$i = 1, 2, 3, \dots, n$

n = number of independent variables

Sub Hypothesis 1.1: There is no significant relationship of the age with the level of role performance of the extension personnel

Here, $H_0 : r_1 = 0$

$H_a : r_1 \neq 0$ (P =0.05)

Sub Hypothesis 1.2: There is no significant relationship of the educational qualification with the level of role performance of the extension personnel

Here, $H_0 : r_2 = 0$

$H_a : r_2 \neq 0$ (P =0.05)

Sub Hypothesis 1.3: There is no significant relationship of the service experience with the level of role performance of the extension personnel

Here, $H_0 : r_3 = 0$

$H_a : r_3 \neq 0$ (P =0.05)

Sub Hypothesis 1.4: There is no significant relationship of the training exposure with the level of role performance of the extension personnel

Here, $H_0 : r_4 = 0$

$H_a : r_4 \neq 0$ (P =0.05)

Sub Hypothesis 1.5: There is no significant relationship of the decision making ability with the level of role performance of the extension personnel

Here, $H_0 : r_5 = 0$

$H_a : r_5 \neq 0$ (P =0.05)

Sub Hypothesis 1.6: There is no significant relationship of the role awareness with the level of role performance of the extension personnel

Here, $H_0 : r_6 = 0$

$H_a : r_6 \neq 0$ (P =0.05)

Sub Hypothesis 1.7: There is no significant relationship of the role perception with the level of role performance of the extension personnel

Here, $H_o : r_7 = 0$

$H_a : r_7 \neq 0$ (P =0.05)

Sub Hypothesis 1.8: There is no significant relationship of the job involvement with the level of role performance of the extension personnel

Here, $H_o : r_8 = 0$

$H_a : r_8 \neq 0$ (P =0.05)

Sub Hypothesis 1.9: There is no significant relationship of the role conflict with the level of role performance of the extension personnel

Here, $H_o : r_9 = 0$

$H_a : r_9 \neq 0$ (P =0.05)

Sub Hypothesis 1.10: There is no significant relationship of the role ambiguity with the level of role performance of the extension personnel

Here, $H_o : r_{10} = 0$

$H_a : r_{10} \neq 0$ (P =0.05)

Sub Hypothesis 1.11: There is no significant relationship of the attitude of the extension personnel towards ATMA with the level of role performance of the extension personnel

Here, $H_o : r_{11} = 0$

$H_a : r_{11} \neq 0$ (P =0.05)

Sub Hypothesis 1.12: There is no significant relationship of the achievement motivation with the level of role performance of the extension personnel

Here, $H_o : r_{12} = 0$

$H_a : r_{12} \neq 0$ (P =0.05)

Sub Hypothesis 1.13: There is no significant relationship of the motivational climate with the level of role performance of the extension personnel

Here, $H_o : r_{13} = 0$

$H_a : r_{13} \neq 0$ (P =0.05)

Sub Hypothesis 1.14: There is no significant relationship of the job satisfaction with the level of role performance of the extension personnel

Here, $H_o : r_{14} = 0$

$H_a : r_{14} \neq 0$ (P =0.05)

Sub Hypothesis 1.15: There is no significant relationship of the job anxiety with the level of role performance of the extension personnel

Here, $H_o : r_{15} = 0$

$H_a : r_{15} \neq 0$ (P =0.05)

Hypothesis No. 2: The selected sets of personal, psychological and organizational variables have no significant influence in explaining the variation in the level of role performance of the extension personnel.

Here, $H_o : b_i = 0$

$H_a : b_i \neq 0$ (P =0.05)

Where,

b_i = Regression Coefficients for respective independent variables

$i = 1,2,3,\dots,n$

n = number of independent variables fitted in the regression model

Sub Hypothesis 2.1: There is no significant influence of service experience in explaining the variation in the level of role performance of the extension personnel.

Here, $H_o : b_1 = 0$

$H_a : b_1 \neq 0$ (P =0.05)

Sub Hypothesis 2.2: There is no significant influence of training exposure in explaining the variation in the level of role performance of the extension personnel

Here, $H_o : b_2 = 0$

$$H_a : b_2 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.3: There is no significant influence of role awareness in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_3 = 0$$

$$H_a : b_3 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.4: There is no significant influence of role perception in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_4 = 0$$

$$H_a : b_4 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.5: There is no significant influence of role conflict in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_5 = 0$$

$$H_a : b_5 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.6: There is no significant influence of attitude of the extension personnel towards ATMA in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_6 = 0$$

$$H_a : b_6 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.7: There is no significant influence of the achievement motivation in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_7 = 0$$

$$H_a : b_7 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.8: There is no significant influence of motivational climate in explaining the variation in the level of role performance of the extension personnel

$$\text{Here, } H_o : b_8 = 0$$

$$H_a : b_8 \neq 0 \text{ (P =0.05)}$$

Sub Hypothesis 2.9: There is no significant influence of job satisfaction in explaining the variation in the level of role performance of the extension personnel

Here, $H_0 : b_9 = 0$

$H_a : b_9 \neq 0$ ($P = 0.05$)

3.6 Statistical analysis and interpretation of data

The data collected in the study were coded, classified, tabulated and analyzed in order to make the findings meaningful. Various descriptive and inferential statistical methods were used to analyze the data in the present study. The statistical techniques and tests used are listed hereunder:

1. Frequency
2. Percentage
3. Mean
4. Standard deviation
5. Coefficient of variance (C.V)
6. Pearson product moment coefficient of correlation
7. Fisher's 't' test
8. Multiple regression analysis
9. Path analysis

The analytical relevance of some of the important statistical techniques used is described below:

3.6.1 Frequency: It is a representation which displays the number of observations within a given interval.

3.6.2 Percentage: It is a fraction expressed with 100 as its denominator. It is used to any set of data for comparison.

3.6.3 Mean: The arithmetic mean is the quotient that results when sum of all items in the series is divided by the number of items. It is the arithmetic average and was used to measure the type of the observation as a whole. The mean for all the readings were worked out as mentioned below.

$$\Sigma X$$

$$\text{Mean } \bar{X} = \frac{\Sigma X}{n}$$

Where,

$\bar{X}$ = Arithmetic mean

ΣX = Summation of item values

n = Number of item

3.6.4 Standard Deviation (S.D): Standard deviation is the square root of the arithmetic mean of the squares of deviations of the items from their arithmetic mean. The positive square root of the variance is also called the standard deviation. It was used to find out the extent of variability shown by the variables, i.e., the dispersion of the variables around the mean. The following formula was used:

$$S.D. = \sqrt{\frac{\Sigma (x_i - \bar{x})^2}{n - 1}}$$

Where,

S.D = Standard deviation

n = Total number of respondent

x_i = Variables of the study

$\bar{x}$ = Mean of the distribution

3.6.5 Coefficient of variance (C.V): By computing the variance of a variable, we may have an idea about the extent of variability to make a meaningful comparison. The co-efficient of variation was computed as a quotient which is resulted when standard deviation is divided by mean of the deviation and is always expressed in percentage. This index was used to find out the relative variability or dispersion of a given set of scores. The C.V of a given distribution was worked out as follows (Garrett, 1979):

$$C.V. = \frac{S.D.}{\bar{x}} \times 100$$

Where,

S.D = Standard deviation

$\bar{x}$ = Mean of the distribution

3.6.6 Pearson product moment co-efficient of correlation: The relationship between each dependent variable and the selected independent variables and also the inter-co-relationship among them were found out by applying Karl Pearson's product moment method. The Pearson Product- Moment Correlation Co-efficient was worked out by using the following formula (Welkowitz *et al.*, 1982).

$$r_{xy} = \frac{N \sum_{xy} - (\sum x)(\sum y)}{\sqrt{N \sum x^2 - (\sum x)^2} [N \sum y^2 - (\sum y)^2]}$$

Where,

r_{xy} = Correlation co-efficient between x & y variables

x = Original scores in variables x

y = Original scores in variables y

Σ = "Summation of"

N = Total number of pairs of observations

Σ = Summation

3.6.7 Multiple linear regression analysis: Finding significant relationship between variables was not the same as ascertaining the relative importance of each of these variables in explaining the dependent variables. The magnitude of simple correlation co-efficient was not generally an accurate indicator because of the effect of other intervening variables that could not be readily controlled. To study the contributory effects of selected independent variables in explaining the variation in each of the dependent variable, multiple linear regression analysis was employed. When all the independent variables are assumed to affect the dependent variable in a linear fashion, the procedure is called multiple linear regressions. The analysis was done with the help of electronic computer employing the following linear regression equation (Vaus, 1986)

$$Y = a + b_1 x_1 + b_2 x_2 + \dots \dots \dots b_n x_n$$

Where,

Y = Dependent Variable

$x_1, x_2, \dots, x_n$ = Independent variables

$b_1, b_2, \dots, b_n$ = Regression co-efficients for respective independent variables

n = number of independent variables fitted in to the regression equation.

a = the constant

3.6.8 Fisher's 't' test:

i) In order to test the significance of observed correlation co-efficients, the Fisher's "t" ratio was found out by using the formula given below (Guilford and Fruchter, 1978).

$$t = \frac{r \sqrt{N-2}}{\sqrt{1-r^2}} \text{ with } (N-2) \text{ d.f.}$$

Where,

r = Observed correlation co-efficient

N = Number of observation

d.f = Degrees of Freedom

ii) The Significance of the regression co-efficient (b) was tested with the help of the "t" values. The following formula (Chandel, 1984) was used.

$$t = \frac{b_i}{S.E(b_i)} \text{ with } (N-K) \text{ d.f.}$$

Where,

b_i = Regression co-efficients for respective independents variables

i = 1, 2, 3, K.

K = number of independent variables

S.E (b_i) = Standard error of b_i

N = Number of observations

3.6.9 Path analysis

Path analysis is a technique that aims at determining the direct and indirect effects among number of variables and thereby helps to a quantitative interpretation to the interrelationships within a known or an assumed casual system that exist in some specific

population. The basic theorem of path analysis states that the zero order correlation between any two variables is equal to the sum of the products of the paths and correlations between all the variables in the system. In this technique the direct and indirect effects are measured by a quantity (standardized partial regression) called the path coefficient. A path coefficient is an absolute number without any physical unit, whatever the actual units of measurement for the variables. It indicates the extent to which the variance in a dependent variable is determined by the variance of the independent variable. It also has direction (Li, 1965 and Pine, 1977).

The objective of doing path analysis in the present study was to get a clear picture of the direct and indirect effects of selected independent variables on the dependent variable. Only those independent variables whose partial regression values were significant in the multiple regression analysis were included in the path analysis. Variables through which substantial indirect effects were channeled were also found out.

Path analysis is a method employed to determine whether or not a multivariate set of non-experimental data fits well with a particular (*a priori*) causal model (Wright, 1934). A path analysis can be worked out as a hierarchical (sequential) multiple regression analysis conducted for testing the significance of relationship in a hypothetical causal model. For this purpose, a hypothetical causal model consisting of variables found significant in correlation analysis was prepared to show their interrelationships. Some exogenous variables whose variance is assumed to be caused entirely by variables not in the causal model were considered in the hypothetical causal models. The connecting line with arrows at both ends in between the two exogenous variables indicates no correlation between these variables as none is explained by either of the variables. Some endogenous variables whose variance is assumed to be explained in part by other variables (intervening variables) in the model were also considered in the hypothetical causal model. The path drawn to endogenous variables are directional (arrowhead on one end only) and must be unidirectional. Hypothetical causal models showing the paths of interrelated variables influencing the level of performance with different role dimensions viz. Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting were also prepared for the convenience of the study.

For each endogenous variable, a multiple regression analysis is conducted predicting the variable (Y) from all other variables which are hypothesized to have direct effect on Y. The variables which are hypothesized to affect Y indirectly were also taken into consideration in the hypothetical causal model. The beta weights from these multiple regression are the path coefficients which were shown in the hypothetical causal model displaying the results of the path analysis.

For each path to an endogenous variable, a path coefficient was computed which was denoted by P_{ij} where 'i' indicates the effect and 'j' the cause. The coefficient may be

positive (increasing the causal variable causes increase in the dependent variable if all other causal variables are held constant) or negative (increasing the causal variable decreases dependent variable). The paths drawn to endogenous variables are directional (arrow head on one end only).

The standardization of the hypothetical causal model was done by keeping the paths where path coefficients were found to be significant. The indirect effects of endogenous variables were calculated by multiplying the path coefficients of intervening variables whereas the direct effect could be evaluated by considering the path coefficients of endogenous variables impacting on Y.

CHAPTER IV

RESULTS AND DISCUSSION

The data collected from the respondents were systematically arranged, coded and analyzed keeping in mind the objectives of the present study. The findings of the study and relevant discussion thereon are presented in this chapter under the following headings:

- 4.1 Personal, Psychological and Organizational characteristics of the respondents
- 4.2 Level of role performance as perceived by the respondents
- 4.3 Relationship of level of role performance with selected independent variables
- 4.4 Contributory effects of selected independent variables on level of role performance
- 4.5 Direct and indirect effects of selected independent variables on level of role performance

4.1 Personal, psychological and organizational characteristics of the respondents

A total of 15 characteristics of the respondents were considered in the study. Out of 15 variables, age, educational qualification, service experience and training exposure were classified as personal, decision making ability, role awareness, role perception, job involvement, role conflict, role ambiguity, attitude towards ATMA and achievement motivation as psychological and motivational climate, job satisfaction and job anxiety as organizational variables. Data on these characteristics of the respondents were properly tabulated and analyzed as per procedure given in chapter III. On each variable, respondents were categorized and their frequency and percentages were worked out. The mean and standard deviation were calculated and relative extent of homogeneity and heterogeneity among respondents with respect to each variable were examined with the help of co-efficient of variation. The findings are presented below :

4.1.1 Personal characteristics of the respondents

Data pertaining to the personal characteristics viz., Age, Educational qualification, Service experience and Training exposure of the respondents are described hereunder.

4.1.1.1 Age

The findings presented in Table 4.1.1 reveal that majority (61.61%) of the respondents belonged to the middle aged category, followed by 20.54 per cent in old aged and 17.85 per cent in young aged category. The mean age value (42.89 years) indicated that on an average the respondents belonged to middle aged category. The value of coefficient of variation (16.06) indicated that the respondents were relatively homogenous with respect to their age. This might be because of the fact that the most of the newly recruited agriculture development officers are young or middle aged and they are very much interested in taking additional charge of convener to work under extension reform.

4.1.1.2 Educational Qualification

Only two categories of educational level could be found out in the study. Table 4.1.2 reveals that majority (53.57%) of the respondents were M.Sc (Agri.) while others (46.43%) were B.Sc. (Agri.) passed. No respondent was found with a Ph.D. degree. The standard deviation (0.50) and coefficient of variation (32.68) indicates that the respondents were homogenous with respect to their educational qualification. It might be because of the fact that majority of the agriculture officer working under extension reforms are very young and possess post graduate qualification before entering into the professional career.

4.1.1.3 Service Experience

The distribution of the respondents with respect to 'service experience' has been presented in the table 4.1.3. It is evident from the table that majority (73.21%) of the respondents had 7 to 17 years of service experience followed by 15.18 per cent respondents who had above 17 years of service experiences. The least numbers of participants (11.61%) had below 7 years of service experiences. The mean service experience value (12.02 years) indicates that on an average the respondents had medium level of service experience. The coefficient of variation (40.93) indicates that the respondents were homogenous with respect to their service experience. This might be because of the fact that many of the young agricultural development officers who have taken the charge of convener to work under extension reform have less service experience.

4.1.1.4 Training exposure

Table 4.1.4 reveals that majority (77.68%) of the respondents had exposure to 17 to 42 days of training followed by 16.96 per cent respondents who had exposure to above 42 days of training. The least number of participants (5.36%) had exposure to below 17 days of training. The mean training exposure value (29.82 days) indicates that on an average the respondents had medium level of training exposure. The coefficient of variation (12.57) indicates that the respondents were homogenous with respect to their training exposure. It also might be because of the fact that many of the agriculture officers working under extension reform were very young and got less opportunity to expose themselves to higher days of training. The less service experience of most of the agriculture officer might also be one of the reasons for not getting adequate training opportunities.

4.1.2 Psychological characteristics of the respondents

Data pertaining to the psychological characteristics viz., Decision making ability, Role awareness, Role perception, Role involvement, Role conflict, Role ambiguity, Attitude towards ATMA and Achievement motivation of the respondents are described hereunder.

4.1.2.1 Decision making ability

A perusal of the Table 4.1.5 reveals that majority (76.79%) of the respondents had medium level of decision making ability followed by 16.96 percent of respondents who had high level of decision making ability. The least (6.25%) number of participants had low level of decision making ability. The mean decision making ability value (29.25) indicates that on an average the respondents had medium level of decision making ability. The coefficient of variation (17.40) indicates that the respondents were homogenous with respect to their decision making ability. This might also be supported by the fact that the young agriculture officers working under extension reform were reluctant to take higher risk while making decision. It might also be due to the fact that limited years of 'service experience' and 'training exposure' acting detrimentally to lower down their confidence to make sound decisions in their profession career.

4.1.2.2 Role awareness

Table 4.1.6 reveals that majority (68.75%) of the respondents had medium level role awareness followed by 18.75 per cent of respondents who had low level of role awareness. The least number of respondents (12.50%) had high level of role awareness. The mean role awareness value (23.91) indicates that on an average the respondents had medium level of role

awareness. The coefficient of variation (28.52) indicates that the respondents were homogenous with respect to their level of role awareness. This might be because of the fact that limited years of 'service experience' and 'training exposure' letting the agricultural development officers to pose less consciousness about their respective set of roles to be carried out in their respective fields.

4.1.2.3 Role perception

A perusal of the Table 4.1.7 reveals that majority (71.43%) of the respondents had medium level of role perception followed by 15.18 percent respondents who had low level of respondents. The least number of respondents (13.39%) had high level of role perception. The mean role perception value (69.08) indicates that on an average the respondents had medium level of role perception. The coefficient of variation (28.26) indicates that the respondents were homogenous with respect to their level of role perception. This might be because of the fact that majority of the respondents had medium level of awareness about their roles to be carried out. As a result, majority of the respondents had identified a fewer roles as their duties to be performed in their job situation.

4.1.2.4 Job involvement

Table 4.1.8 reveals that majority (63.39%) of the respondents had medium level of job involvement followed by 19.64 percent respondents who had low level of job involvement. The least number of respondents (16.96%) had high level of job involvement. The mean job involvement value (40.98) indicates that on an average the respondents had medium level of job involvement. The coefficient of variation (28.21) indicates that the respondents were homogenous with respect to their level of job involvement. The probable reason being the 'medium' by majority of the respondents in respect to 'role involvement' might be due to medium level of 'role awareness' and 'role perception', as a result of which majority of the respondents were not identified the importance of all the roles assigned to him in performing their duties.

4.1.2.5 Role conflict

Table 4.1.9 reveals that majority (63.39%) of the respondents had medium level of role conflict followed by 18.75 percent respondents who had low level of role conflict. The least number of respondents (17.86%) had high level of role conflict. The mean role conflict value (33.46) indicates that on an average the respondents had medium level of role conflict. The coefficient of variation (25.25) indicates that the respondents were homogenous with respect to their level of role conflict. The lower level of 'role awareness', 'role perception' and 'role involvement' might put the agricultural development officers in confusion or in

congruence of various job responsibilities which is indicated as being the medium by the majority of the respondents in respect to 'role conflict'.

4.1.2.6 Role ambiguity

Table 4.1.10 reveals that majority (58.93%) of the respondents had medium level of role ambiguity followed by 22.32 percent respondents who had high level of role ambiguity. The least number of respondents (18.75%) had low level of role ambiguity. The mean role ambiguity value (39.32) indicates that on an average the respondents had medium level of role ambiguity. The coefficient of variation (20.88) indicates that the respondents were homogenous with respect to their level of role ambiguity. The lack of role clarity and insufficient information about the process to accomplish these roles might put majority of the respondents in the medium level of ambiguous situation.

4.1.2.7 Attitude towards ATMA

Table 4.1.11 reveals that majority (66.07%) of the respondents had favourable attitude towards ATMA. An equal proportion (16.96%) of the respondents had less favourable and highly favourable attitude towards ATMA. The mean attitude towards ATMA value (54.42) indicates that on an average the respondents had favourable attitude towards ATMA. The coefficient of variation (25.25) indicates that the respondents were homogenous with respect to their attitude towards ATMA. This might be because of the fact that ATMA guidelines are easy to follow and the opportunity given for self and professional up scaling is much more visible and achievable by the agriculture officers.

4.1.2.8 Achievement motivation

A perusal of the Table 4.1.12 reveals that majority (66.96%) of the respondents had medium level of achievement motivation followed by 17.86 percent respondents who had low level of achievement motivation. The least number of respondents (15.18%) had high level of achievement motivation. The mean achievement motivation value (61.59) indicates that on an average the respondents had medium level of achievement motivation. The coefficient of variation (25.85) indicates that the respondents were homogenous with respect to their level of achievement motivation. This might be because of the fact that majority of the respondents willing to do something well for the greater sake of farming community rather than to gain power or love or recognition or profit. The another reason might be due to the fact that most of agriculture officers are young and energetic and most of them had experienced short period of service life so far.

4.1.3 Organizational characteristics of respondents

Data pertaining to the organizational characteristics viz., Motivational climate, Job satisfaction and Job anxiety of the respondents are described hereunder.

4.1.3.1 Motivational climate

A perusal of the Table 4.1.13 reveals that majority (58.93%) of the respondents perceived the motivational climate as favourable followed by 20.54 per cent respondents who perceived the motivational climate as highly favourable. An equal proportion of them perceived the motivational climate as less favourable. The mean motivational climate value (166.10) indicates that on an average the respondents perceived the motivational climate as favourable. The coefficient of variation (25.27) indicates that the respondents were homogenous with respect to their perception of motivational climate. The findings imply the prevailing congenial environment in the organization which specifically activates, energizes, direct an employee towards the achievement of organizational as well as personal goal.

4.1.3.2 Job satisfaction

Table 4.1.14 reveals that majority (66.07%) of the respondents had moderate level of job satisfaction followed by 18.75 percent respondents who had low level of job satisfaction. The least number of respondents (15.18%) had high level of job satisfaction. The mean job satisfaction value (61.82) indicates that on an average the respondents had moderate level of satisfaction. The coefficient of variation (24.28) indicates that the respondents were homogenous with respect to their level of job satisfaction. This might be because of the fact that most the respondent could get satisfaction from the job and working environment. Another reason might be due to the fact that most of the agricultural development officers got ample opportunities to help the farming community up to the desired level through the ATMA interventions.

4.1.3.3 Job anxiety

Table 4.1.15 reveals that majority (65.18%) of the respondents had medium level of job anxiety followed by 19.64 per cent respondents who had low level of job anxiety. The least number of respondents (15.18%) had high level of job anxiety. The mean job anxiety value (10.50) indicates that on an average the respondents had medium level of job anxiety. The coefficient of variation (32.76) indicates that the respondents were homogenous with respect to their level of job anxiety. It might be due to the wariness of the young agricultural development officers regarding future prospect, recognition and fair evaluation. As most of the young officers' shoulder down the additional responsibilities of work under extension reform, they might think it as burden or misgiving worry.

4.2 Level of role performance as perceived by the respondents

A perusal of the Table 4.2.1 reveals that majority (62.50%) of the respondents had medium level of role performance followed by 19.64 per cent respondents who had low level of role performance. The least number of respondents (17.85%) had high level of role performance. The value of coefficient of variation (24.82) indicates that the respondents were homogenous with respect to their level of role performance. A pie diagram showing the distribution of respondents according to their level of role performance was drawn and presented in Fig. 4.2.1.

4.2.1 Performance of different role items by the respondents under different role dimensions

For assessing the level of role performance of the respondents, seven (7) different role dimensions were considered in the study. These were- Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting. Each role dimension consisted of six role items. After obtaining the respondents' scoring on the index of performance, the different role items under each role dimensions were rank ordered on the basis of weighted mean scores. Data pertaining to performance of different role items by the respondents under different role dimensions are presented hereunder.

4.2.1.1 Performance of different role items by the respondents under planning dimension

Table 4.2.2 reveals that the highest rank was occupied by the role 'Identification and prioritization of needs and interest of the farmers' with a weighted mean score of 3.642. The role 'Preparation of Block Action Plan' stood second in the rank order with a weighted mean score of 3.625 followed by the role 'Developing module for capacity building programmes' with a weighted mean score of 3.258.

The fourth rank was occupied by the role 'Helping district core team in up gradation of SREP' with a weighted mean score of 2.946. The role 'Exploring new area of farming having present and future prospects' stood fifth in the rank order with a weighted mean score of 2.767 followed by the role 'Carrying out socio-economic analysis for group formation' with a weighted mean score of 2.419. A bar diagram showing the performance of different role items under planning dimension was drawn and presented in Fig. 4.2.2.

Identifying farmer's need and interest makes the benchmark for designing the extension activities to be undertaken in a locality. The success of any extension programme depends on how best the farmers' 'felt' and 'unfelt' needs were shorted out and fulfilled considering the socio-economic and ecological condition of the locality. The extension activities

are generally based on the 'felt' and 'unfelt' needs of the farmers which are being prioritized before putting it into the action plan. These fairly justified the role number 4 and role number 2 being in the rank 1 and 2, respectively.

4.2.1.2 Performance of different role items by the respondents under organizing dimension

Table 4.2.3 reveals that the highest rank was occupied by the role 'Organizing farmer's meeting in setting aims and objectives' with a weighted mean score of 3.312. The role 'Organizing exhibition, kissan mela, fruits/ vegetable show' stood second in the rank order with a weighted mean score of 3.062 followed by the role 'Operationalising SREP in each block' with a weighted mean score of 3.017.

The fourth rank was occupied by the role 'Facilitating farmers' organization at block level' with a weighted mean score of 2.839. The role 'Establishing linkages for convergence with line department' stood fifth in the rank order with a weighted mean score of 2.821 followed by the role 'Organizing capacity building programmes for farmers and farmers' group' with a weighted mean score of 2.723.

A bar diagram showing the performance of different role items under organizing dimension was drawn and presented in Fig. 4.2.3.

Organizing farmer's meeting for collective decision making is very much essential in planning, implementation and evaluation of any extension programme. It helps to identify the key issues by consensus which are needed to be addressed in preparation of Block Action Plan (BAP) and in operationalizing in Strategic Research and Extension Plan (SREP). These issues are necessary for addressing through the provision under extension reform through capacity building programme in the forms of demonstration, exposure visit and exhibition show. These fairly justified the role 4 and role 5 being in the rank 1 and 2, respectively.

4.2.1.3 Performance of different role items by the respondents under staffing dimension

Table 4.2.4 reveals that the highest rank was occupied by the role 'Helps in formation of Farm Information and Advisory Centre' with a weighted mean score of 3.535. The role 'Selection of beneficiaries in consultation with farmers' advisory committee and village panchayats' stood second in the rank order with a weighted mean score of 3.339 followed by the role 'Identification of farmers and farmers' group for rewards and incentives' with a weighted mean score of 3.125.

The fourth rank was occupied by the role 'Helping farmer's group in selection of its members' with a weighted mean score of 3.071. The role 'Identification of resource persons for capacity building programmes' stood fifth in the rank order with a weighted mean score of 2.607 followed by the role 'Identification and development of leader for farmers group' with a weighted mean score of 2.500. A bar diagram showing the performance of different role items under staffing dimension was drawn and presented in Fig. 4.2.4.

Collection of feedback and readdressing of feedback plays an important role in effective extension delivery system. It can only be possible sufficient nos of feedback can be gathered and addressed in quick succession. Farm Information and Advisory Centre' (FIAC) is a centre which is formed at block level with different farmer's representatives of different social strata. It acts as two way communication tools for information dissemination and generation. Most of the extension interventions under extension reform are done through the consent of FIAC. FIAC looks after the selection of beneficiaries in consultation with village panchayats which help the extension system in disseminating the information in a democratic manner. In the mean time it also helps in bringing out the feedback into the eye of the extension system. These fairly justified the role no 5 and 1 being in the rank 1 and 2, respectively.

4.2.1.4 Performance of different role items by the respondents under directing dimension

Table 4.2.5 reveals that the highest rank was occupied by the role 'Providing timely and relevant information to farmers' with a weighted mean score of 3.571. The role 'Helping farmers groups in maintaining sustainability and leadership' stood second in the rank order with a weighted mean score of 3.187 followed by the role 'Facilitating farmer to farmer technology dissemination and learning' with a weighted mean score of 2.937.

The fourth rank was occupied by the role 'Detailing the activities to be carried out by farmers advisory committee' with a weighted mean score of 2.866. The role 'Helping farmers in getting necessary inputs from the service centre' stood fifth in the rank order with a weighted mean score of 2.678 followed by the role 'Intimating farmers and resource persons for the capacity building programmes' with a weighted mean score of 2.419. A bar diagram showing the performance of different role items under directing dimension was drawn and presented in Fig. 4.2.5.

Providing timely and relevant information to the farmers is very much essential for any extension programme to become successful. For effective extension delivery, need based information must be at the doorstep of the farmers when it is needed. Irrelevant information or improper timing messages reduces the credibility of the extension system. The sustainability criteria such as leadership styles, transparency in financial matter, record keeping,

frequency of meeting, regularity in attendance and quantum of socioeconomic activities undertaken are the factors which are considered as good predictors of longevity of a group. These justified the role no 6 and 4 being in the rank 1 and 2, respectively.

4.2.1.5 Performance of different role items by the respondents under coordinating dimension

Table 4.2.6 reveals that the highest rank was occupied by the role ‘Coordinating assessment, refinement, validation and adoption of front line technologies with local research centres’ with a weighted mean score of 3.267. The role ‘Coordinating block meeting to discuss the issues brought by farmer’s advisory committee’ stood second in the rank order with a weighted mean score of 3.098 followed by the role ‘Helps in federation of farmers’ group from block to district level’ with a weighted mean score of 3.044.

The fourth rank was occupied by the role ‘Coordinating the implementation of extension programmes detailed in BAP’ with a weighted mean score of 2.892. The role ‘Helps in establishing information portals for information sharing’ stood fifth in the rank order with a weighted mean score of 2.821 followed by the role ‘Monitoring the functioning of farmers’ group on a regular basis’ with a weighted mean score of 2.169. A bar diagram showing the performance of different role items under coordinating dimension was drawn and presented in Fig. 4.2.6.

Convergence with the line departments in planning and implementation of extension activities is one of the core issues of extension reform system. Agriculture and allied departments including financial institutions, state agricultural university, rural development departments, and nongovernmental organizations need to be lined up in joint technology assessment, refinement and validation. Feedback retrieval and readdressing need to be strengthened to meet the need and interest of the farming community. For this, coordinating block meeting to discuss the issues brought by farmer’s advisory committee is essential to include those in policy formulation. These fairly justified the role 3 and role 2 being in the rank 1 and 2, respectively.

4.2.1.6 Performance of different role items by the respondents under reporting dimension

Table 4.2.7 reveals that the highest rank was occupied by the role ‘Supporting ATMA management committee in discharging its function’ with a weighted mean score of 3.169. The role ‘Reporting farmer’s feed back in block meeting’ stood second in the rank order with a weighted mean score of 3.089 followed by the role ‘Keeping inventory of all the beneficiary farmers and farm related activities’ with a weighted mean score of 2.955.

The fourth rank was occupied by the role 'Compiling report on reviewing of progress and reporting the same to ATMA Management Committee' with a weighted mean score of 2.928. The role 'Submission of work plans to State Level sanctioning Committee' stood fifth in the rank order with a mean score of 2.803 followed by the role 'Documentation and publication of success stories of farmers' with a weighted mean score of 2.589. A bar diagram showing the performance of different role items under reporting dimension was drawn and presented in Fig. 4.2.7.

The importance of feedback retrieval and readdressing is highly felt in the extension reform system to make the extension system demand driven and farmer oriented. Feedback itself is a kind of evaluation which helps the extension system to do the needful refinement and validation to its delivery mechanism. These justified the role 4 and role 2 being the rank 1 and 2, respectively.

4.2.1.7 Performance of different role items by the respondents under budgeting dimension

Table 4.2.8 reveals that the highest rank was occupied by the role 'Maintaining proper record and account for the activities carried out' with a weighted mean score of 3.205. The role 'Compiling report on utilization of fund and the physical progress of work' stood second in the rank order with a weighted mean score of 2.964 followed by the role 'Provisioning rewards and incentives for successful farmer(s)/ groups' with a weighted mean score of 2.955.

The fourth rank was occupied by the role 'Working on the credit appraisal and approval for the activities to be carried out' with a weighted mean score of 2.705. The role 'Provisioning seed money/revolving fund for functioning of farmers' group' stood fifth in the rank order with a weighted mean score of 2.669 followed by the role 'Mobilizing fund needed for documentation and publication of success stories' with a weighted mean score of 2.508.

A bar diagram showing the performance of different role items under budgeting dimension was drawn and presented in Fig. 4.2.8. Maintaining proper record and account not only enhance transparency but also increase the accountancy in performing the activities. Compiling report on utilization of fund and the physical progress of work is one of the core activities under the extension reform system. It helps in keep track of fund and avoid unnecessary utilization. Both these activities help in determining the pattern of fund utilization and physical coverage made in a particular year.

4.3 Relationship of level of role performance with selected independent variables

Karl Pearson's coefficient of correlation was used to examine the relationship of the selected personal, psychological and organizational variables viz., Age, Educational qualification, Service experience, Training exposure, Decision making ability, Role awareness, Role perception, Job involvement, Role conflict, Role ambiguity, Attitude towards ATMA, Achievement motivation, Motivational climate, Job satisfaction and Job anxiety with the level of role performance of the respondents according to different role dimensions and also with the overall level of role performance. Results of the correlation analysis are presented in the subsections to follow :

4.3.1 Relationship between the independent variables and the level of role performance under planning dimension

It is evident from Table 4.3.1 that the level of role performance under planning dimension had positive and significant correlation with service experience ($r=0.331^{**}$), training exposure ($r=0.323^{**}$), role awareness ($r=0.576^{**}$), role perception ($r=0.535^{**}$), attitude

towards ATMA ($r=0.615^{**}$), achievement motivation ($r=0.619^{**}$), motivational climate ($r=0.568^{**}$) and job satisfaction ($r=0.511^{**}$) at 0.01 level of probability.

It can be seen that while role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had moderately strong relationship with the planning role performance of the extension personnel, the variables service experience and training exposure showed relatively weaker relationship with the planning role performance of the extension personnel.

Table 4.3.1 also reveals that the level of role performance under planning dimension had negative and significant correlation with role conflict ($r= -0.473^{**}$) and job anxiety ($r= -0.504^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the planning role performance of extension personnel.

4.3.2 Relationship between the independent variables and the level of role performance under organizing dimension

It is observed from Table 4.3.2 that the level of role performance under organizing dimension had positive and significant correlation with service experience ($r=0.264^{**}$), training exposure ($r=0.241^{**}$), role awareness ($r=0.484^{**}$), role perception ($r=0.507^{**}$), Attitude towards ATMA ($r=0.478^{**}$), achievement motivation ($r=0.562^{**}$), motivational climate ($r=0.469^{**}$) and job satisfaction ($r=0.410^{**}$) at 0.01 level of probability.

It can be seen that while role perception and achievement motivation had moderately strong relationship with the organizing role performance of the extension personnel, the variables service experience, training exposure, role awareness, attitude towards ATMA, motivational climate and job satisfaction showed relatively weaker relationship with the organizing role performance of the extension personnel.

It is evident from Table 4.3.2 that the organizing dimension had negative and significant correlation with role conflict ($r= -0.420^{**}$) and job anxiety ($r=-0.488^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the organizing role performance of extension personnel.

4.3.3 Relationship between the independent variables and the level of role performance under staffing dimension

Table 4.3.3 reveals that the level of role performance under staffing dimension had positive and significant correlation with service experience ($r=0.361^{**}$), training exposure ($r=0.292^{**}$), role awareness ($r=0.429^{**}$), role perception ($r=0.488^{**}$), attitude towards ATMA ($r=0.527^{**}$), achievement motivation ($r=0.596^{**}$), motivational climate ($r=0.460^{**}$) and job satisfaction ($r=0.477^{**}$) at 0.01 level of probability.

It can be seen that while attitude towards ATMA and achievement motivation had moderately strong relationship with the staffing role performance of the extension personnel, the variables service experience, training exposure, role awareness, role perception, motivational climate and job satisfaction showed relatively weaker relationship with the staffing role performance of the extension personnel.

It is observed from Table 4.3.3 that the staffing dimension had negative and significant correlation with role conflict ($r= -0.470^{**}$) and job anxiety ($r=-0.404^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the staffing role performance of extension personnel.

4.3.4 Relationship between the independent variables and the level of role performance under directing dimension

A perusal of the Table 4.3.4 reveals that the level of role performance under directing dimension had positive and significant correlation with service experience ($r=0.378^{**}$), training exposure ($r=0.269^{**}$), role awareness ($r=0.491^{**}$), role perception ($r=0.490^{**}$), attitude towards ATMA ($r=0.559^{**}$), achievement motivation ($r=0.612^{**}$), motivational climate ($r=0.507^{**}$) and job satisfaction ($r=0.459^{**}$) at 0.01 level of probability.

It is evident from the table that while attitude towards ATMA, achievement motivation and motivational climate had moderately strong relationship with the directing role performance of the extension personnel, the variables service experience, training exposure, role awareness, role perception and job satisfaction showed relatively weaker relationship with the directing role performance of the extension personnel.

It can be observed from Table 4.3.4 that the performance of directing role dimension had negative and significant correlation with role conflict ($r= -0.407^{**}$) and job anxiety ($r= -0.466^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the directing role performance of extension personnel.

4.3.5 Relationship between the independent variables and the level of role performance under coordinating dimension

It is observed from Table 4.3.5 that the level of role performance under coordinating dimension had positive and significant correlation with service experience ($r=0.321^{**}$), training exposure ($r=0.352^{**}$), role awareness ($r=0.517^{**}$), role perception ($r=0.509^{**}$), attitude towards ATMA ($r=0.530^{**}$), achievement motivation ($r=0.610^{**}$), motivational climate ($r=0.497^{**}$), and job satisfaction ($r=0.481^{**}$) at 0.01 level of probability.

It can be seen that while role awareness, role perception, attitude towards ATMA and achievement motivation had moderately strong relationship with the coordinating role performance of the extension personnel, the variables service experience, training exposure, motivational climate and job satisfaction showed relatively weaker relationship with the coordinating role performance of the extension personnel.

It is observed from the table that the performance of coordinating role dimension had negative and significant correlation with role conflict ($r= -0.381^{**}$) and job anxiety ($r= -0.476^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the coordinating role performance of extension personnel.

4.3.6 Relationship between the independent variables and the level of role performance under reporting dimension

Table 4.3.6 reveals that the level of role performance under reporting dimension had positive and significant correlation with service experience ($r=0.362^{**}$), training exposure ($r=0.337^{**}$), role awareness ($r=0.608^{**}$), role perception ($r=0.573^{**}$), attitude towards ATMA ($r=0.573^{**}$), achievement motivation ($r=0.594^{**}$), motivational climate ($r=0.522^{**}$) and job satisfaction ($r=0.391^{**}$) at 0.01 level of probability.

It is evident from the table that while role awareness, role perception, attitude towards ATMA, achievement motivation and motivational climate had moderately strong relationship with the reporting role performance of the extension personnel, the variables service experience, training exposure, and job satisfaction showed relatively weaker relationship with the reporting role performance of the extension personnel.

Table 4.3.6 also reveals that the reporting role performance had negative and significant correlation with role conflict ($r= -0.490^{**}$) and job anxiety ($r=-0.500^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity

were found to have no significant relationship with the reporting role performance of extension personnel.

4.3.7 Relationship between the independent variables and the level of role performance under budgeting dimension

It is observed from Table 4.3.7 that the level of role performance under budgeting dimension had positive and significant correlation with service experience ($r=0.293^{**}$), training exposure ($r=0.325^{**}$), role awareness ($r=0.538^{**}$), role perception ($r=0.512^{**}$), attitude towards ATMA ($r=0.512^{**}$), achievement motivation ($r=0.549^{**}$), motivational climate ($r=0.455^{**}$) and job satisfaction ($r=0.429^{**}$) at 0.01 level of probability.

It can be seen that while role awareness, role perception, attitude towards ATMA and achievement motivation had moderately strong relationship with the budgeting role performance of the extension personnel, the variables service experience, training exposure, motivational climate and job satisfaction showed relatively weaker relationship with the budgeting role performance of the extension personnel.

It can also be observed from Table 4.3.7 that the budgeting role performance had negative and significant correlation with role conflict ($r= -0.521^{**}$) and job anxiety ($r= -0.483^{**}$). However, age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the budgeting role performance of extension personnel.

4.3.8 Relationship between the independent variables and level of overall role performance

A perusal of the Table 4.3.8 reveals that the level of overall role performance of the respondents had positive and significant correlation with service experience ($r=0.364^{**}$), training exposure ($r=0.337^{**}$), role awareness ($r=0.656^{**}$), role perception ($r=0.593^{**}$), attitude towards ATMA ($r=0.597^{**}$), achievement motivation ($r=0.653^{**}$), motivational climate ($r=0.548^{**}$) and job satisfaction ($r=0.498^{**}$) at 0.01 level of probability.

It can be seen that while role awareness, attitude towards ATMA, achievement motivation and motivational climate had moderately strong relationship with the overall role performance of the extension personnel, the variables service experience, training exposure and job satisfaction showed relatively weaker relationship with the overall role performance of the extension personnel.

As the overall role performance had positive and significant relationship with service experience, training exposure, role awareness, role perception, role conflict, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction, therefore, the null hypotheses stating that these variables have no significant relationship with the level of role performance were rejected and the corresponding alternative hypotheses were accepted.

The variables 'Training exposure' and 'Service experience' showed significant relationship with the level of performance of extension personnel. The reason might be the fact that higher exposure to training developed better insight through increased information and participation with different sources of information. The people who had high degree of 'Training exposure' and 'Service experience' were more likely to have social mobility, more expose to outside contact and had a tendency to change over to new ideas and culture rather than remaining conservative and tradition oriented. They might consider ATMA as an enterprise and therefore, might have better contacts with information generating sources as well as extension agencies to seek specific knowledge under extension reform. The result of the present study conforms to the findings of Balasubramanian and Perumal (1991), Gogoi and Talukdar (1993), Kumar (2001), Kumari *et al.* (1997), Awasthi *et al.* (2001), Yadav *et al.* (2010), Das *et al.* (2010) and Maiti *et al.* (2011).

Positive relationship with 'Attitude towards ATMA' suggests that most of the extension functionaries were more aware about the importance of ATMA which ultimately influenced high and whole hearted participation in performance. The positive relationship with 'Role awareness' and 'Role perception' suggest that they were more conscious about their role and their duties which ultimately influence the performance level. Increased awareness and perception of their role increases their involvement in their role which has reflected through the positive relationship between role involvement and role performance. The variable 'Achievement motivation' showed significant relationship with the level of performance of extension personnel. This might be because of the fact that the respondents spontaneously expressed desire to do something well for its own sake which is ultimately reflected through their increased level of performance. The result of the present study conforms to the findings of Reddy (1986), Sundaraswamy (1987), Reddy and Jayaramaiah (1990), Bhuyan (1995), Hansen *et al.* (2004) and Manjunath and Shashidahra (2011).

The organizational variables like 'Motivational climate' and 'Job satisfaction' were positively correlated with the level of performance. The degree of happiness with one's job and working environment is related with the performance level. It suggests that the prevailing environment in the organization activates, energizes, and directs the employee towards the achievement of organizational and personal goals. Positive relationship was found between 'Job anxiety' and 'Performance'. It might be because of the fact that with the fair

amount of job anxiety's component like job security, recognition and fair evaluation, human relation at work, future prospects, capacity and confidence to shoulder job responsibilities increases the performance level of the employee of an institution. The result of the present study conforms to the findings of Judge and Hulin (1993), Judge *et al.* (2001), Miller (2006). Adeyemi (2008), Moyes *et al.* (2008), Bryson *et al.* (2010) and Manjunath and Shashidahra (2011).

It is also evident from Table 4.3.8 that the overall level of role performance had negative and significant correlation with role conflict ($r = -0.498^{**}$) and job anxiety ($r = -0.523^{**}$). Therefore, the null hypotheses stating that these variables have no significant relationship with the level of role performance were rejected and the corresponding alternative hypotheses were accepted.

However, the variables age, educational qualification, decision making ability, job involvement and role ambiguity were found to have no significant relationship with the overall level of role performance of extension personnel and hence the null hypotheses stating that these variables have no significant relationship with the role performance could not be rejected.

4.4 Contributory effects of selected independent variables on level of role performance

The correlation analysis provides us with information about the nature and magnitude of relationship between the independent variables and the level of performance. It does not provide us with information about the relative contributory effects of the independent variables in explaining the variation in the level of role performance of the respondents. Therefore, the technique of multiple regression analysis was employed for this purpose. The independent variables which were significantly correlated with the level of performance were only considered for regression analysis. Multiple regression analysis was used to determine the contributory effects of selected independent variables in explaining the variation in the level of role performance of the respondents with respect to different role dimensions and also with respect to their overall level of role performance. Results of the regression analysis are presented in the subsections to follow:

4.4.1 Contributory effects of selected independent variables on the level of role performance under planning dimension

It is evident from Table 4.4.1 that service experience ($b = 0.171^{**}$), training exposure ($b = 0.051^{*}$), role awareness ($b = 0.613^{**}$), role perception ($b = 0.377^{**}$), attitude towards ATMA ($b = 0.115^{**}$), achievement motivation ($b = 0.038^{*}$), motivational climate

($b=0.027^{**}$), and job satisfaction ($b=0.090^{**}$) had positive and significant contribution towards explaining the variation in the level of role performance under planning dimension.

It is observed from the table that job anxiety (-0.272^{**}) had negative and significant contribution towards the planning role performance. However role conflict had no significant contribution towards the planning role performance.

The value of coefficient of multiple regression (R^2) being 0.801 indicated that the independent variables jointly contributed 80.10 per cent towards the planning role performance. The F value ($F=40.668$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the planning role performance when all of them were functioning jointly.

4.4.2 Contributory effects of selected independent variables on the organizing role performance

It is evident from Table 4.4.2 that role awareness ($b=1.049^{**}$), role perception ($b=0.478^{**}$), attitude towards ATMA ($b=0.067^*$), motivational climate ($b=0.020^*$) and job satisfaction ($b=0.079^{**}$) had positive and significant contribution towards the organizing role performance of the extension personnel.

It is observed from the table that job anxiety (-0.355^{**}) had negative and significant contribution towards the organizing role performance. However service experience, training exposure, role conflict and achievement motivation had no significant contribution towards the organizing role performance.

The value of coefficient of multiple determination (R^2) being 0.634 indicated that the independent variables jointly contributed 63.40 per cent towards the organizing role performance. The F value ($F=17.498$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the organizing role performance when all of them were functioning jointly.

4.4.3 Contributory effects of selected independent variables on the staffing role performance

It is evident from Table 4.4.3 that service experience ($b=0.231^{**}$), training exposure ($b=0.066^*$), role perception ($b=0.397^{**}$), attitude towards ATMA ($b=0.089^{**}$), achievement motivation ($b=0.065^*$), motivational climate ($b=0.017^*$) and job satisfaction ($b=0.091^{**}$) had positive and significant contribution towards the staffing role performance of the extension personnel.

It can be observed from the table that role awareness, role conflict and job anxiety had no significant contribution towards the staffing role performance.

The value of coefficient of multiple determination (R^2) being 0.663 indicated that the independent variables jointly contributed 66.30 per cent towards the variation in the staffing role performance. The F value ($F=19.839$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the staffing role performance when all of them were functioning jointly.

4.4.4 Contributory effects of selected independent variables on the directing role performance

It is evident from Table 4.4.4 that service experience ($b=0.250^{**}$), role awareness ($b=0.647^*$), role perception ($b=0.384^{**}$) attitude towards ATMA ($b=0.116^{**}$), achievement motivation ($b=0.063^*$), motivational climate ($b=0.023^*$) and job satisfaction ($b=0.089^{**}$) had positive and significant contribution towards the directing role performance of the extension personnel.

It can be seen that while role awareness had moderately strong contribution towards the directing role performance of the extension personnel, the variables service experience, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction showed relatively weaker contribution towards the directing role performance of the extension personnel.

It is observed from the table that job anxiety (-0.293^{**}) had negative and significant contribution towards the directing role performance. However training exposure and role conflict had no significant contribution towards the directing role performance.

The value of coefficient of multiple determination (R^2) being 0.701 indicated that the independent variables jointly contributed 70.10 percent towards the variation in the directing role performance. The F value ($F=23.737$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the directing role performance when all of them were functioning jointly.

4.4.5 Contributory effects of selected independent variables on the coordinating role performance

It is evident from Table 4.4.5 that service experience (0.164^*), training exposure ($b=0.083^{**}$), role awareness ($b=0.917^{**}$), role perception (0.272^*), attitude towards ATMA ($b=0.075^{**}$), achievement motivation ($b=0.084^{**}$), motivational climate ($b=0.019^*$)

and job satisfaction ($b=0.098^{**}$) had positive and significant contribution towards the coordinating role performance of the extension personnel.

It can be seen that while role awareness had moderately strong contribution towards the coordinating role performance of the extension personnel, the variables service experience, training exposure, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction showed relatively weaker contribution towards the coordinating role performance of the extension personnel.

It is observed from the table that job anxiety (-0.287^{**}) had negative and significant contribution towards the coordinating role performance. However, role conflict had no significant contribution towards the coordinating role performance.

The value of coefficient of multiple determination (R^2) being 0.709 indicated that the independent variables jointly contributed 70.90 percent towards the variation in the coordinating role performance. The F value ($F=24.596$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the coordinating role performance when all of them were functioning jointly.

4.4.6 Contributory effects of selected independent variables on the reporting role performance

It is evident from Table 4.4.6 that service experience ($b=0.168^{**}$), training exposure ($b=0.078^{**}$), role awareness ($b=1.241^{**}$), role perception ($b=0.323^{**}$), attitude towards ATMA ($b=0.089^{**}$), achievement motivation ($b=0.046^{**}$) and motivational climate ($b=0.021^{**}$) had positive and significant contribution towards the reporting role performance of the extension personnel.

It can be seen that while role awareness had moderately strong contribution towards the reporting role performance of the extension personnel, the variables service experience, training exposure, role perception, attitude towards ATMA, achievement motivation and motivational climate showed relatively weaker contribution towards the reporting role performance of the extension personnel.

It is observed from the table that job anxiety (-0.278^{**}) had negative and significant contribution towards the reporting role performance. However, role conflict and job satisfaction had no significant contribution towards the reporting role performance.

The value of coefficient of multiple determination (R^2) being 0.7461 indicated that the independent variables jointly contributed 74.61 percent towards the variation in the

reporting role performance. The F value ($F=29.686$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the reporting role performance when all of them were functioning jointly.

4.4.7 Contributory effects of selected independent variables on the budgeting role performance

It is evident from Table 4.4.7 that training exposure ($b=0.089^{**}$), role awareness ($b=1.163^{**}$), attitude towards ATMA ($b=0.067^{*}$), achievement motivation ($b=0.061^{*}$), motivational climate ($b=0.017^{*}$) and job satisfaction ($b=0.057^{*}$) had positive and significant contribution towards the budgeting role performance of the extension personnel.

It can be seen that while role awareness had moderately strong contribution towards the budgeting role performance of the extension personnel, the variables training exposure, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction showed relatively weaker contribution towards the budgeting role performance of the extension personnel.

It is observed from the table that role conflict (-0.116^{*}) and job anxiety (-0.263^{*}) had negative and significant contribution towards the budgeting role performance. However, role perception had no significant contribution towards the budgeting role performance.

The value of coefficient of multiple determination (R^2) being 0.672 indicated that the independent variables jointly contributed 67.20 percent towards the variation in the budgeting role performance. The F value ($F=20.687$) was also found to be significant. This indicates the significant effectiveness of these variables in explaining the budgeting role performance when all of them were functioning jointly.

4.4.8 Contributory effects of selected independent variables on the level of overall role performance

It is evident from Table 4.4.8 that service experience ($b=1.125^{**}$), training exposure ($b=0.442^{**}$), role awareness ($b=1.083^{**}$), role perception ($b=0.332^{**}$), attitude towards ATMA ($b=0.616^{**}$), achievement motivation ($b=0.382^{**}$), motivational climate ($b=0.141^{**}$), and job satisfaction ($b=0.519^{**}$) had positive and significant contribution towards the overall role performance of the extension personnel at 0.01 level of probability.

It can be seen that while service experience, role awareness, attitude towards ATMA, and job satisfaction had moderately strong contribution towards the overall role

performance of the extension personnel, the variables training exposure, role perception, achievement motivation, achievement motivation and motivational climate showed relatively weaker contribution towards the overall role performance of the extension personnel.

As the service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the overall role performance, therefore, the null hypotheses stating that these variables have no significant influence in explaining the variation in the overall performance were rejected and the corresponding alternative hypotheses were accepted.

Table 4.4.8 also reveals that job anxiety (-1.839**) had negative contribution towards the overall role performance. Therefore, the null hypothesis stating that job anxiety has no significant influence in explaining the variation in the overall role performance was rejected and the corresponding alternative hypothesis was accepted.

However, role conflict was found to have no significant contribution and hence the null hypotheses stating that role conflict have no significant influence in explaining the variation in overall role performance was accepted.

The value of coefficient of multiple determination (R^2) being 0.825 indicated that the ten independent variables jointly could predict 82.50 per cent of the variation in level of overall role performance of the extension personnel.

The F value ($F=47.555$) was also found to be significant. This indicates the significant effectiveness of these independent variables in predicting the variation in the overall level of role performance when all of them were functioning jointly.

4.5 Direct and indirect effects of selected independent variables on the level of role performance

The independent variables whose partial regression values were significant in the multiple regression analyses were included in the path analysis. The objective of doing path analysis was to get a clear picture of the direct and indirect effects of the selected independent variables on the level of role performance of the extension personnel. Variables through which substantial indirect effects were channeled were also found out. The path analysis was done with respect to different role dimensions under consideration and also with respect to the overall level of role performance. The results of path analyses are presented in the subsections to follow.

4.5.1 Direct and indirect effects of selected independent variables on the planning role performance

A hypothetical causal model showing the paths of interrelated variables influencing the planning role performance was constructed and shown in the Fig. 4.5.1. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.2. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of performance of the extension personnel.

It can be seen from the Fig. 4.5.2 that the effect of the two exogenous variables namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the planning role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of planning role performance was exhibited by role awareness (3.749) followed by role perception (1.310), job anxiety (1.059) and service experience (0.677).

It is evident from Table 4.5.1 that the highest direct effect on the level of planning role performance was exhibited by role awareness (2.518) which was followed by role perception (1.058), job anxiety (0.875), service experience (0.403) and role conflict (0.335). The remaining other variables namely attitude towards ATMA (0.268), achievement motivation (X_7) (0.233) job satisfaction (0.204) and motivational climate (0.082) had registered comparatively smaller direct effects on the level of planning role performance of the extension personnel.

The maximum indirect effect was exhibited by the role awareness (1.231), which was followed by service experience (0.274), role perception (0.252) and job anxiety (0.184). The remaining other variables namely job satisfaction (0.098), role conflict (0.074), motivational climate (0.073) and achievement motivation (0.072) had registered comparatively smaller indirect effect on the level of planning role performance.

4.5.2 Direct and indirect effects of selected independent variables on the organizing role performance

A hypothetical causal model showing the paths of interrelated variables influencing the organizing role performance was constructed and shown in the Fig. 4.5.3. The

variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.4. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of organizing role performance of the extension personnel.

It is evident from the Fig. 4.5.4 that the effect of the two exogenous variables, namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the organizing role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of organizing role performance was exhibited by role awareness (3.708) followed by role perception (1.187), job anxiety (1.084) and service experience (0.512).

It can be observed from the Table 4.5.2 that the maximum direct effect on the level of organizing role performance was exhibited by the role awareness (2.652), which was followed by role perception (1.007), job anxiety (0.883), service experience (0.335) and role conflict (0.309). The remaining other variables, namely achievement motivation (0.220), attitude towards ATMA (0.217), job satisfaction (0.170) and motivational climate (0.069) had registered comparatively smaller direct effect on the level of organizing role performance of the extension personnel.

The maximum indirect effect was exhibited by role awareness (1.056) which was followed by job anxiety (0.201), role perception (0.180) and service experience (0.177). The remaining other variables namely job satisfaction (0.087), motivational climate (0.068), role conflict (0.058), and achievement motivation (0.057) had registered comparatively smaller indirect effect on the level of organizing role performance.

4.5.3 Direct and indirect effects of selected independent variables on the staffing role performance

A hypothetical causal model showing the paths of interrelated variables influencing the level of staffing role performance was developed and shown in the Fig. 4.5.5. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of staffing role performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of

multiple regressions and drawn as depicted in the Fig. 4.5.6. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of staffing role performance of the extension personnel.

It can be seen from the figure 4.5.6 that the effect of the two exogenous variables namely 'service experience'(X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the level of staffing role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of staffing role performance was exhibited by role awareness (3.655) followed by role perception (1.170), job anxiety (0.918) and service experience (0.745).

The maximum direct effect on the level of staffing role performance was exhibited by role awareness (2.219) which was followed by role perception (0.959), job anxiety (0.737), service experience (0.461) and role conflict (0.349). The remaining other variables, namely attitude towards ATMA (0.241), achievement motivation (0.235), job satisfaction (0.199) and motivational climate (0.069) had comparatively smaller direct effect on the level of staffing role performance of the extension personnel.

Table 4.5.3 also reveals that the maximum indirect effect was exhibited by role awareness (1.436) which was followed by service experience (0.284), role perception (0.211) and job anxiety (0.181). The remaining other variables namely job satisfaction (0.094), motivational climate (0.069), role conflict (0.059), and achievement motivation (0.058) had shown comparatively smaller indirect effect on the level of staffing role performance.

4.5.4 Direct and indirect effects of selected independent variables on the directing role performance

A hypothetical causal model showing the paths of interrelated variables influencing the directing role performance was made and shown in the Fig. 4.5.7. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.8. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of directing role performance of the extension personnel.

It can be seen from the Fig. 4.5.8 that the effect of the two exogenous variables namely 'service experience'(X_1) and 'motivational climate' (X_8) were channelized through

different variables to ultimately affect the directing role performance. ‘Attitude towards ATMA’ and ‘role conflict’ were the two most important variables through which most of the indirect effects were channelized. The highest total effect on level of directing role performance was exhibited by role awareness (3.869) followed by role perception (1.213), job anxiety (1.060) and service experience (0.808).

It can be seen from the Table 4.5.4 that the maximum direct effect was exhibited by role awareness (2.517) which was followed by role perception (1.030), job anxiety (0.876), service experience (0.498) and role conflict (0.312). The remaining other variables namely attitude towards ATMA (0.264), achievement motivation (0.249), job satisfaction (0.198) and motivational climate (0.078) had registered comparatively smaller direct effect on the level of directing role performance of the extension personnel.

The maximum indirect effect was exhibited by role awareness (1.352) which was followed by service experience (0.310), job anxiety (0.184) and role perception (0.183). The remaining other variables namely job satisfaction (0.101), motivational climate (0.075), role conflict (0.069), and achievement motivation (0.068) had exhibited comparatively smaller indirect effects on the level of directing role performance of the extension personnel.

4.5.5 Direct and indirect effects of selected independent variables on the coordinating role performance

A hypothetical causal model showing the paths of interrelated variables influencing the level of coordinating role performance was made and shown in the Fig. 4.5.9. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.10. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of coordinating role performance of the extension personnel.

It can be seen from the Fig. 4.5.10 that the effect of the two exogenous variables namely ‘service experience’(X_1) and ‘motivational climate’ (X_8) were channelized through different variables to ultimately affect the level of coordinating role performance. ‘Attitude towards ATMA’ and ‘role conflict’ were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of coordinating role performance was exhibited by role awareness (3.551), followed by job anxiety (1.048), service experience (0.581), role conflict (0.345) and achievement motivation (0.302).

It can be seen from the Table 4.5.6 that the maximum direct effect on the level of coordinating role performance was exhibited by role awareness (2.991) which was followed by job anxiety (0.868), service experience (0.410) and role conflict (0.283). The remaining other variables namely attitude towards ATMA (0.242), achievement motivation (0.241), job satisfaction (0.201) and motivational climate (0.074) had registered comparatively smaller direct effect on the level of coordinating role performance of the extension personnel.

The maximum indirect effect was exhibited by role awareness (0.560) which was followed by job anxiety (0.180), service experience (0.171), and job satisfaction (0.96). The remaining other variables namely motivational climate (0.074), role conflict (0.062), and achievement motivation (0.061) had registered comparatively smaller indirect effects on the level of coordinating role performance.

4.5.6 Direct and indirect effects of selected independent variables on the reporting role performance

A hypothetical causal model showing the paths of interrelated variables influencing the reporting role performance was made and shown in the Fig. 4.5.11. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of reporting role performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.12. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of reporting role performance of the extension personnel.

It can be seen from the Fig. 4.5.12 that the effect of the two exogenous variables namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the level of reporting role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of reporting role performance was exhibited by role awareness (4.688), followed by role perception (1.356), job anxiety (1.062), service experience (0.794), and role conflict (0.422).

It can be seen from the Table 4.5.6 that the maximum direct effect on the level of reporting role performance was exhibited by role awareness (3.082) which was followed by role perception (1.127), job anxiety (0.899), service experience (0.457) and role conflict (0.359). The remaining other variables, namely attitude towards ATMA (0.258), achievement motivation (0.231), job satisfaction (0.161) and motivational climate (0.077) had registered

comparatively smaller direct effect on the level of reporting role performance of the extension personnel.

The maximum indirect effect was exhibited by role awareness (1.606) which was followed by service experience (0.337), role perception (0.229) and job anxiety (0.163). The remaining other variables namely job satisfaction (0.095), motivational climate (0.070), achievement motivation (0.063) and role conflict (0.063) had registered comparatively smaller indirect effect on the level of reporting role performance.

4.5.7 Direct and indirect effects of selected independent variables on the budgeting role performance

A hypothetical causal model showing the paths of interrelated variables influencing the level of budgeting role performance was constructed and shown in the Fig. 4.5.13. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of budgeting role performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.14. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of budgeting role performance of the extension personnel.

It can be seen from the table Fig. 4.5.14 that the effect of the two exogenous variables namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the budgeting role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of budgeting role performance was exhibited by role awareness (4.526), followed by role perception (1.127), job anxiety (1.097), service experience (0.488), and role conflict (0.455).

It can be seen from the Table 4.5.7 that the maximum direct effect on the level of budgeting role performance was exhibited by role awareness (2.706) which was followed by role perception (0.992), job anxiety (0.901), role conflict (0.396) and service experience (0.383). The remaining other variables, namely attitude towards ATMA (0.239), achievement motivation (0.222), job satisfaction (0.184) and motivational climate (0.069) had shown comparatively smaller direct effect on the budgeting role performance of the extension personnel.

The maximum indirect effect was exhibited by role awareness (1.820) which was followed by job anxiety (0.196), role perception (0.135) and service experience (0.105).

The remaining other variables namely job satisfaction (0.090), motivational climate (0.070), role conflict (0.059) and achievement motivation (0.058) had registered comparatively smaller indirect effect on the level of budgeting role performance.

4.5.8 Direct and indirect effects of selected independent variables on the overall role performance

A hypothetical causal model showing the paths of interrelated variables influencing the level of overall role performance was made and shown in the Fig. 4.5.15. The variables which were found significant in the correlation analysis were selected for the causal model to show their indirect interrelationship towards the level of overall role performance. Sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the model was restructured based on the values of multiple regressions and drawn as depicted in the Fig. 4.5.16. The diagram was drawn to show the direct and indirect effects among the interrelated independent variables towards the level of overall role performance of the extension personnel.

It can be seen from the Table 4.5.8 that the maximum direct effect on the level of overall role performance was exhibited by job anxiety (6.040) variable which was followed by role awareness (3.824), service experience (2.947), role conflict (2.345) and attitude towards ATMA (1.731). The remaining other four variables namely achievement motivation (1.632), job satisfaction (1.319), role perception (1.208) and motivational climate (0.519) had registered comparatively smaller direct effect on the level of overall role performance of the extension personnel.

The maximum indirect effect was exhibited by the service experience (2.848) variable which was followed by role awareness (2.607), job anxiety (1.022) and motivational climate (0.493). The remaining other four variables namely Job satisfaction (0.667), role conflict (0.440), achievement motivation (0.436) and role perception (0.186) had registered comparatively smaller indirect effect on the overall role performance of the extension personnel.

It can be seen from the Fig. 4.5.18 that the effect of the two exogenous variables namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the level of overall role performance. 'Attitude towards ATMA' and 'role conflict' were the two most important variables through which most of the indirect effects were channelized. The highest total effect on the level of overall role performance was exhibited by role awareness (3.749), followed by role perception (1.310), job anxiety (1.059), service experience (0.677), and role conflict (0.409).

It is evident from the results of the path analyses that the variables role awareness, role perception and job anxiety emerged to be three most important variables which exhibited substantial direct effects on the level of role performance of the extension personnel with respect to different role dimensions under study and also with respect to their level of overall role performance.

CHAPTER V

SUMMARY AND CONCLUSION

The summary and conclusion of the study are presented in this chapter under the following headings:

5.1 Introduction

5.2 Research methodology

5.3 Salient findings

5.4 Implication of the findings

5.5 Suggestions for further research

5.1 Introduction

In country like India where Agro-climatic zones widely differ besides significant variation in socio-economic status of farmers, uniform extension service is not the panacea for all the regions. It was realized that public extension system will have to be placed in new decentralized institutional arrangements which are demand driven, farmer-accountable, bottom-up and have farming system approach. It has been realized that the public sector extension system on its own is not capable enough to meet the ever increasing and multi faceted demands of the farming community due to several constraints or weaknesses in the system. So, it was realized that the present public sector extension system should be restructured or reformed to meet the farmer's technological requirements. It was felt that extension system should be made broad-based and holistic by utilizing a farming system approach and involving various stakeholders.

Thus, to address the specific constraints, weaknesses and gaps in the present extension system, the National Agricultural Technology Project (NATP) was initiated by the Ministry of Agriculture, Govt. of India, with financial assistance from World Bank in November, 1998 (in 7 states covering 28 districts). The basic premise of NATP was that research and extension programmes should be farmer cantered and demand driven. The overall objective of NATP was to revitalize the agricultural technology generation, assessment, refinement and dissemination system. The Innovation in Technology Dissemination (ITD)

component of NATP aimed at addressing key constraints in technology generation, validation and dissemination by introducing certain institutional models and operational reform processes in selected states in the country. The institutional arrangements are made through creation of ATMA as registered society at district level. The operational reforms are made through decentralized decision making by increasing the farmer's input into programme planning and resource allocation.

ATMA is a registered society responsible for all the technology dissemination activities at the district level. The ATMA has close linkages with all the line departments of the government, research organizations, non-governmental organizations and organizations or agencies associated with agricultural development in the district. In each NATP project district, an ATMA serve as the focal point for integrating research, extension and marketing activities and for decentralizing day-to-day management of the public 'Agricultural Technology System' (ATS). All research and extension (R-E) units in a project district, including Krishi Vigyan Kendras (KVKs), Zonal Research Stations (ZRSs), Regional Agricultural Research Station (RARSs) and other line or development departments such as the departments of agriculture, animal husbandry, horticulture and fisheries would become constituent members of the ATMA. The ATMA provides mechanism to decentralize decision-making, to reflect local needs, to strengthen research- extension- farmer linkages and to integrate technology dissemination activities across different institutions.

Presently the State Department of Agriculture is a nodal agency to implement Agriculture Technology Management Agency (ATMA) (funded by Ministry of Agriculture and Cooperation, GOI) at the district level. The coordination and integration of activities of other development departments is envisaged under ATMA. Government of India is funding ATMA programme in all the districts of the country. Every district has to prepare the Strategic Research and Extension Plan (SREP) for implementing ATMA in respective districts. The SREP is prepared through participatory methodologies such as Participatory Rural Appraisal Techniques (PRA) involving all the stake holders and farmers. The SREP contains detailed analysis of all the information on existing farming systems in the district and research-extension gaps required to be filled up. It also prioritizes the research-extension strategies within the district. It becomes the basis for development work plans at block/district level.

The effective implementation of 'ATMA' largely depends on how effectively the extension functionaries perceive their roles and perform those. The performance of the employee is the key to the success of most of the organizations and must be evaluated. In Assam, no in-depth study has been conducted till date on evaluation of role performance of extension functionaries under revitalized extension system. It is in this background, the proposed study entitled **"A study on the role performance of the agricultural extension**

personnel in the revitalized extension system in the state of Assam” is undertaken with the following objectives :

4. To determine the level of role performance as perceived by the agricultural extension personnel in the revitalized extension system
5. To identify the variables which significantly contribute towards the level of role performance of the agricultural extension personnel in the revitalized extension system
6. To determine the direct and indirect effects of selected variables on level of role performance of the agricultural extension personnel in the revitalized extension system

5.2 Research methodology

The present study was conducted in Assam, one of the states of North-eastern India, lying between 24° to 28°18' north latitudes and 89°50' to 97°4' east longitudes. A multistage purposive sampling method was followed to select the respondents for the study. The study was carried out in 11 (eleven) districts of Assam. These districts were purposively selected as Agricultural Technology and Management Agency (ATMA) was first constituted in these districts under the World Bank aided Assam Agricultural Competitiveness Project (AACP). There were 115 agricultural development blocks in the 11 ATMA districts selected for the study. All these agricultural development blocks were covered under the study. Agricultural Development Officers (ADOs) who have worked as conveners in the respective BRCs of the sampled districts were selected as respondents for the study. Thus 115 ADOs from 11 ATMA districts were selected as respondents for the study. However, in spite of repeated attempts, 3 (three) ADOs could not be contacted for personal interview and hence dropped from the sampling frame. Finally, 112 ADOs from 11 ATMA districts constituted the sample of respondents for the study. The primary data for the study were collected during the period from March to July, 2015.

The level of role performance of the extension personnel was the dependent variable in the study. A standardized index consisting of 42 role items was developed to measure the dependent variable in the study. The 42 role items of the index were distributed under 7 different role dimensions, namely, planning, organizing, staffing, directing, coordinating, reporting and budgeting. A total of 15 independent variables were selected for the study, viz., age, educational qualification, service experience, training exposure, decision making ability, role awareness, role perception, job involvement, role conflict, role ambiguity, attitude towards ATMA, achievement motivation, motivational climate, job satisfaction and job anxiety. For convenience of the study, the independent variables were categorized into three categories, namely personal, psychological and organizational variables. Attitude of the

extension personnel towards ATMA was measured with the attitude scale developed for the study by following the method of summated rating.

The primary data for the study were collected through personal interview method with the help of a pretested structured schedule. Various descriptive and inferential statistical measures were employed to analyze the data. In the context of the statistical analysis, a set of explicit hypotheses were formulated in the present study. In general, testing of hypotheses was done on the basis of null hypotheses under consideration. The statistical techniques and tests used for analysis and interpretation of data included frequency, percentage, Mean, standard deviation, coefficient of variation, Pearson product moment coefficient of correlation, Fisher's 't' test, multiple regression analysis and path analysis.

5.3 Salient findings

The salient findings of the present study are summarized below:

5.3.1 Personal, Psychological and Organizational characteristics of the respondents

The findings of this study revealed that majority (61.61%) of the respondents belonged to the middle aged category, followed by 20.54 per cent in old aged and 17.85 per cent in young aged category. The mean age value (42.89 years) indicated that on an average the respondents belonged to middle aged category. Majority (53.57%) of the respondents were M.Sc (Agri.) while others (46.43%) were B.Sc. (Agri.) passed. No respondent was found with a Ph.D. degree. Majority (73.21%) of the respondents had 7 to 17 years of service experience followed by 15.18 per cent respondents who had above 17 years of service experiences. The least numbers of participants (11.61%) had below 7 years of service experiences. The mean service experience value (12.02 years) indicated that on an average the respondents had medium level of service experience. Majority (77.68%) of the respondents had exposure to 17 to 42 days of training followed by 16.96 per cent respondents who had exposure to above 42 days of training. The least number of participants (5.36%) had exposure to below 17 days of training. The mean training exposure value (29.82 days) indicated that on an average the respondents had medium level of training exposure. Majority (76.79%) of the respondents had medium level of decision making ability followed by 16.96 percent of respondents who had high level of decision making ability. The least (6.25%) number of participants had low level of decision making ability. The mean decision making ability value (29.25) indicated that on an average the respondents had medium level of decision making ability. Majority (68.75%) of the respondents had medium level role awareness followed by 18.75 per cent of respondents who had low level of role awareness. The least number of respondents (12.50%) had high level of role awareness. The mean role awareness value (23.91) indicated that on an average the respondents had medium level of role awareness. Majority (71.43%) of the respondents had medium level of role perception followed by 15.18 percent respondents who had low level of respondents. The least

number of respondents (13.39%) had high level of role perception. The mean role perception value (69.08) indicated that on an average the respondents had medium level of role perception. Majority (63.39%) of the respondents had medium level of job involvement followed by 19.64 percent respondents who had low level of job involvement. The least number of respondents (16.96%) had high level of job involvement. The mean job involvement value (40.98) indicated that on an average the respondents had medium level of job involvement. Majority (63.39%) of the respondents had medium level of role conflict followed by 18.75 percent respondents who had low level of role conflict. The least number of respondents (17.86%) had high level of role conflict. The mean role conflict value (33.46) indicated that on an average the respondents had medium level of role conflict. Majority (58.93%) of the respondents had medium level of role ambiguity followed by 22.32 percent respondents who had high level of role ambiguity. The least number of respondents (18.75%) had low level of role ambiguity. The mean role ambiguity value (39.32) indicated that on an average the respondents had medium level of role ambiguity. Majority (66.07%) of the respondents had favourable attitude towards ATMA. An equal proportion (16.96%) of the respondents had less favourable and highly favourable attitude towards ATMA. The mean attitude towards ATMA value (54.42) indicated that on an average the respondents had favourable attitude towards ATMA. Majority (66.96%) of the respondents had medium level of achievement motivation followed by 17.86 per cent respondents who had low level of achievement motivation. The least number of respondents (15.18%) had high level of achievement motivation. The mean achievement motivation value (61.59) indicated that on an average the respondents had medium level of achievement motivation. Majority (58.93%) of the respondents perceived the motivational climate as favourable followed by 20.54 percent respondents who perceived the motivational climate as highly favourable. An equal proportion of them perceived the motivational climate as less favourable. The mean motivational climate value (166.10) indicated that on an average the respondents perceived the motivational climate as favourable. Majority (66.07%) of the respondents had moderate level of job satisfaction followed by 18.75 per cent respondents who had low level of job satisfaction. The least number of respondents (15.18%) had high level of job satisfaction. The mean job satisfaction value (61.82) indicated that on an average the respondents had moderate level of satisfaction. Majority (65.18%) of the respondents had medium level of job anxiety followed by 19.64 per cent respondents who had low level of job anxiety. The least number of respondents (15.18%) had high level of job anxiety. The mean job anxiety value (10.50) indicated that on an average the respondents had medium level of job anxiety.

5.3.2 Level of overall role performance of the respondents

Majority (62.50%) of the respondents had medium level of role performance followed by 19.64 per cent respondents who had low level of role performance. The least number of respondents (17.85%) had high level of role performance. The value of coefficient of

variation (24.82) indicated that the respondents were homogenous with respect to their level of role performance.

5.3.3 Performance of different role items by the respondents under different role dimensions

As regards to performance of different role items by the respondents under planning dimension, the highest rank was occupied by the role 'Identification and prioritization of needs and interest of the farmers' with a weighted mean score of 3.642. The role 'Preparation of Block Action Plan' stood second in the rank order with a weighted mean score of 3.625 followed by the role 'Developing module for capacity building programmes' with a weighted mean score of 3.258.

As regards to performance of different role items by the respondents under organizing dimension, the highest rank was occupied by the role 'Organizing farmer's meeting in setting aims and objectives' with a weighted mean score of 3.312. The role 'Organizing exhibition, kisan mela, fruits/ vegetable show' stood second in the rank order with a weighted mean score of 3.062 followed by the role 'Operationalising SREP in each block' with a weighted mean score of 3.017.

As regards to performance of different role items by the respondents under staffing dimension, the highest rank was occupied by the role 'Helps in formation of Farm Information and Advisory Centre' with a weighted mean score of 3.535. The role 'Selection of beneficiaries in consultation with farmers' advisory committee and village panchayats' stood second in the rank order with a weighted mean score of 3.339 followed by the role 'Identification of farmers and farmers' group for rewards and incentives' with a weighted mean score of 3.125.

As regards to performance of different role items by the respondents under directing dimension, the highest rank was occupied by the role 'Providing timely and relevant information to farmers' with a weighted mean score of 3.571. The role 'Helping farmers groups in maintaining sustainability and leadership' stood second in the rank order with a weighted mean score of 3.187 followed by the role 'Facilitating farmer to farmer technology dissemination and learning' with a weighted mean score of 2.937.

As regards to performance of different role items by the respondents under coordinating dimension, the highest rank was occupied by the role 'Coordinating assessment, refinement, validation and adoption of front line technologies with local research centres' with a weighted mean score of 3.267. The role 'Coordinating block meeting to discuss the issues brought by farmer's advisory committee' stood second in the rank order with a weighted mean score of 3.098 followed by the role 'Helps in federation of farmers' group from block to district level' with a weighted mean score of 3.044.

As regards to performance of different role items by the respondents under reporting dimension, the highest rank was occupied by the role 'Supporting ATMA management committee in discharging its function' with a weighted mean score of 3.169. The role 'Reporting farmer's feed back in block meeting' stood second in the rank order with a weighted mean score of 3.089 followed by the role 'Keeping inventory of all the beneficiary farmers and farm related activities' with a weighted mean score of 2.955.

As regards to performance of different role items by the respondents under budgeting dimension, the highest rank was occupied by the role 'Maintaining proper record and account for the activities carried out' with a weighted mean score of 3.205. The role 'Compiling report on utilization of fund and the physical progress of work' stood second in the rank order with a weighted mean score of 2.964 followed by the role 'Provisioning rewards and incentives for successful farmer(s)/ groups' with a weighted mean score of 2.955.

5.3.4 Relationship of level of role performance with selected independent variables

Karl Pearson's coefficient of correlation was used to examine the relationship of 15 independent variables with the level of role performance of the respondents with regard to different role dimensions and also with regard to the level of overall role performance. Significance of their relationships was ascertained by calculating 't' values. Two tailed tests were employed to verify the hypotheses formulated in this regard.

As regards each of the seven role dimensions considered in the study, viz., planning, organizing, staffing, directing, coordinating, reporting and budgeting, 8 independent variables, viz., service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction were positively and significantly correlated with the level of role performance at 0.01 level whereas the variables role conflict and job anxiety were negatively and significantly correlated with the level of role performance at 0.01 level. Although the nature of correlation coefficients were similar for all the role dimensions, the magnitudes of correlation coefficients were different for different role dimensions indicating a range from moderately strong to moderately weak relationship of these independent variables with the level of role performance.

As regards overall role performance, 8 independent variables, viz., service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction were positively and significantly correlated with the level of overall role performance at 0.01 level whereas the variables role conflict and job anxiety were negatively and significantly correlated with the level of overall role performance at 0.01 level.

While the variables role awareness, attitude towards ATMA, achievement motivation and motivational climate had moderately strong relationship with the overall role performance of the extension personnel, the variables service experience, training exposure and job satisfaction showed relatively weaker relationship with the overall role performance of the extension personnel.

As the variables service experience, training exposure, role awareness, role perception, role conflict, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction were found to have positive and significant relationship with overall role performance, therefore, the null hypotheses stating that these variables have no significant relationship with the level of role performance of the extension personnel were rejected and the corresponding alternative hypotheses were accepted. As the variables role conflict and job anxiety were negatively and significantly correlated with the level of overall role performance, therefore, the null hypotheses stating that these variables have no significant relationship with the level of role performance were rejected and the corresponding alternative hypotheses were accepted.

5.3.5 Contributory effects of selected independent variables on level of role performance

Multiple regression analysis was used to determine the contributory effects of selected independent variables in explaining the variation in the level of role performance of the respondents with respect to different role dimensions and also with respect to their level of overall role performance. In all the cases, the independent variables which were significantly correlated with the level of performance were only considered for regression analysis.

Results of the regression analysis revealed that variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction, had positive and significant contribution towards explaining the variation in the level of role performance under planning dimension. The variable job anxiety had negative and significant contribution towards the planning role performance.

While the variables role awareness, role perception, attitude towards ATMA, motivational climate, and job satisfaction had positive and significant contribution towards the organizing role performance of the extension personnel, the variable job anxiety had negative and significant contribution towards the organizing role performance.

The variables service experience, training exposure, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the staffing role performance of the extension personnel.

While the variables service experience, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the directing role performance of the extension personnel, the variable job anxiety had negative and significant contribution towards the directing role performance.

While the variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction, had positive and significant contribution towards the coordinating role performance of the extension personnel, the variable job anxiety had negative and significant contribution towards the coordinating role performance.

While the variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation and motivational climate had positive and significant contribution towards the reporting role performance of the extension personnel, the variable job anxiety had negative and significant contribution towards the reporting role performance.

While the variables training exposure, role awareness, attitude towards ATMA, achievement motivation, motivational climate, and job satisfaction, had positive and significant contribution towards the budgeting role performance of the extension personnel, the variables role conflict and job showed negative and significant contribution towards the budgeting role performance.

As regards overall role performance, the variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the overall role performance of the extension personnel at 0.01 level.

While the variables service experience, role awareness, attitude towards ATMA, and job satisfaction had moderately strong contribution towards the overall role performance of the extension personnel, the variables training exposure, role perception, achievement motivation, achievement motivation and motivational climate showed relatively weaker contribution towards the overall role performance of the extension personnel.

As the service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction had positive and significant contribution towards the overall role performance, therefore, the null hypotheses stating that these variables have no significant influence in explaining the variation

in the overall performance were rejected and the corresponding alternative hypotheses were accepted.

The variables job anxiety had negative contribution towards the overall role performance. Therefore, the null hypothesis stating that job anxiety has no significant influence in explaining the variation in the overall role performance was rejected and the corresponding alternative hypothesis was accepted.

The value of coefficient of multiple determination (R^2) being 0.825 indicated that the ten independent variables jointly could predict 82.50 per cent of the variation in the level of overall role performance of the extension personnel.

The F value ($F=47.555$) was also found to be significant indicating the significant effectiveness of these independent variables in predicting the variation in the overall level of role performance when all of them were functioning jointly.

5.3.6 Direct and indirect effects of selected independent variables on the level of role performance

The independent variables whose partial regression values were significant in the multiple regression analyses were included in the path analysis. The objective of doing path analysis was to get a clear picture of the direct and indirect effects of the selected independent variables on the level of role performance of the extension personnel. Variables through which substantial indirect effects were channeled were also found out. The path analysis was done with respect to different role dimensions under consideration and also with respect to the overall level of role performance.

A hypothetical causal model showing the paths of interrelated variables influencing the role performance with respect to each of the role dimensions under study and with respect to overall role performance was constructed. The variables which were found significant in the correlation analysis were selected for the causal models to show their indirect interrelationship towards the level of performance. In each case, sequential multiple regression was done to analyze the actual causal interrelationship among the variables. Hence, the causal model was restructured based on the values of multiple regressions and the path diagrams were drawn to show the direct and indirect effects among the interrelated independent variables towards the level of performance of the extension personnel.

The results of path analyses revealed that the highest direct effect on the level of planning role performance was exhibited by role awareness (2.518) which was followed by role perception (1.058), job anxiety (0.875), service experience (0.403) and role conflict (0.335).

The maximum direct effect on the level of organizing role performance was exhibited by the role awareness (2.652), which was followed by role perception (1.007), job anxiety (0.883), service experience (0.335) and role conflict (0.309).

The maximum direct effect on the level of staffing role performance was exhibited by role awareness (2.219) which was followed by role perception (0.959), job anxiety (0.737), service experience (0.461) and role conflict (0.349).

The maximum direct effect on the level of directing role performance was exhibited by role awareness (2.517) which was followed by role perception (1.030), job anxiety (0.876), service experience (0.498) and role conflict (0.312).

The maximum direct effect on the level of coordinating role performance was exhibited by role awareness (2.991) which was followed by job anxiety (0.868), service experience (0.410) and role conflict (0.283).

The highest direct effect on the level of reporting role performance was exhibited by role awareness (3.082) which was followed by role perception (1.127), job anxiety (0.899), service experience (0.457) and role conflict (0.359).

The maximum direct effect on the level of budgeting role performance was exhibited by role awareness (2.706) which was followed by role perception (0.992), job anxiety (0.901), role conflict (0.396) and service experience (0.383).

As regards to overall role performance, the maximum direct effect on the level of overall role performance was exhibited by job anxiety (6.040) which was followed by role awareness (3.824), service experience (2.947), role conflict (2.345) and attitude towards ATMA (1.731). The remaining other four variables namely achievement motivation (1.632), job satisfaction (1.319), role perception (1.208) and motivational climate (0.519) had registered comparatively smaller direct effect on the level of overall role performance of the extension personnel. The effects of the two exogenous variables namely 'service experience' (X_1) and 'motivational climate' (X_8) were channelized through different variables to ultimately affect the level of overall role performance.

The results of the path analyses indicated that the variables role awareness, role perception and job anxiety emerged to be three most important variables which exhibited substantial direct effects on the level of role performance of the extension personnel with respect to different role dimensions under study and also with respect to their level of overall role performance.

5.4 Implication of the findings

1. The findings on level of overall role performance revealed that more than 80.00 per cent of the respondents had low to medium level of performance. Only a small proportion of them (17.85%) were found with high level of role performance. An effective management strategy for organizational performance should seek to pin point the gaps in performance of their assigned roles and try to reduce them as far as practicable.
2. Higher level of role performance is likely to impact positively on employees' and organization's well-being. The findings revealed that most of the extension personnel working under the revitalized extension system in Assam were young and middle aged and had medium level of service experience and training exposure to cope up with the changing agricultural scenario. The adequate exposure to professional training through capacity building will help to reorient the extension personnel with the new set of roles, their perception and performance. Care should also be taken to improve the motivational climate to increase the job satisfaction and achievement motivation which is evident from the direct and indirect relationships among these variables.
3. The findings of correlation analysis, regression and path analysis indicated that the variables service experience, training exposure, role awareness, role perception, attitude towards ATMA, achievement motivation, motivational climate and job satisfaction were the important variables influencing the level of role performance of extension personnel. A highly significant and positive correlation of these variables with the level of performance indicated that the extension personnel with longer service experience, higher training exposures, higher role awareness, higher role perception, highly favourable attitude towards ATMA, higher achievement motivation, more favourable motivational climate and higher job satisfaction were likely to influence the level of role performance to great extent. Where these attributes are at lower level in the extension personnel, suitable management strategies may be adopted to modify their behaviour for increased level of performance of their roles.
4. The findings revealed that majority of the respondents had exposure to 17 to 42 days of training. Only a small proportion of them had exposure to above 42 days of training. The mean training exposure value indicated that on an average the respondents had medium level of training exposure. The adequate exposure to professional training through capacity building will help to reorient the extension personnel with the new set of roles, their perception and performance.

5. The findings revealed that more than 87.00 per cent of the respondents had low to medium level of role awareness. Only a small proportion of them (12.50%) were found with high level of role awareness. Role awareness of employees relates to the consciousness about the set of roles which are expected to play in performing their different jobs. An effective management strategy for organizational performance should aim to increase the level of role awareness of the extension personnel for increased level of performance of their jobs.
6. The findings revealed that more than 86.00 per cent of the respondents had low to medium level of role perception. Only a small proportion of them (13.39%) were found with high level of role perception. Perception is an activity through which an individual become aware of objects around him and of events taking place. Perception of the same situation may differ from individual to individual due to differences in their experiences and cognitive styles. An effective management strategy for organizational performance should aim to increase the level of role perception of the extension personnel for increased level of performance of their jobs.
7. The findings revealed that more than 83.00 per cent of the respondents had low to medium level of job involvement. Only a small proportion of them (16.96%) were found with high level of job involvement. The mean job involvement value also indicated that on an average the respondents had medium level of job involvement. Job involvement is the degree to which a person is identified psychologically with the importance of his work in his total self image. It is the degree to which one is cognitively preoccupied with, engaged in, and concerned with one's present job. Efforts should be made to increase the level of job involvement of the extension personnel which shall help to enhance their level of role performance.
8. The mean role conflict value indicated that on an average the respondents had medium level of role conflict. Role conflict is an incongruity of the expectations associated with a role. It implies to the degree to which goals, objectives, and responsibilities of a position conflict with one another. An effective management strategy for organizational performance should aim to reduce the level of role conflict of the extension personnel for increased level of performance of their jobs.
9. The findings revealed that more than 80.00 per cent of the respondents had medium to high level of role ambiguity. Role ambiguity occurs due to lack of information available to perform one's responsibilities effectively. Individuals experiencing role ambiguity lack adequate information about what their responsibilities are and insufficient information about the process to accomplish these responsibilities. An effective management strategy

for organizational performance should aim to reduce the level of role ambiguity of the extension personnel for increased level of performance of their jobs.

10. The mean motivational climate value indicated that on an average the respondents perceived the motivational climate as favourable. About one fifth of the respondents, however, perceived the motivational climate as less favourable. Motivational climate is the general culture of the organization characterized by dominant psychological needs or motives. It is the environment prevailing in the organization which specifically activates, energizes, direct an employee towards the achievement of organizational and personal goals. Efforts should be made to provide a highly favourable motivational climate which will facilitate pursuit for excellence and thereby enhance the level of role performance of the extension personnel.
11. The findings revealed that around 85.00 per cent of the respondents had low to moderate level of job satisfaction. Only a small proportion of them were found with high level of job satisfaction. satisfaction refers to the level of fulfilment of ones needs, wants and desire. Job satisfaction is the degree to which the work situation results in fulfillment of the needs or certain values of the individual employee. It is a measure of how happy workers are with their job and working environment. Effective organizations should have a culture that encourages the employee satisfaction. Efforts need to be made to provide a favourable organizational culture that encourages the employee satisfaction and thereby enhance the level of performance of their roles.
12. The findings revealed that around 85.00 per cent of the respondents had low to moderate level of achievement motivation. Only a small proportion of them were found with high level of achievement motivation. Achievement motivation refers to the need for success or the attainment of excellence. Individuals will satisfy their needs through different means, and are driven to succeed for varying reasons both internal and external. It is a spontaneously expressed desire to do something well for its own sake rather than to gain power or love or recognition or profit. It reflects one's concern to excel in his/ her field and direct his/ her behaviour accordingly in order to pursue the goal. An effective management strategy for organizational performance should aim to increase the level of achievement motivation of the extension personnel for increased level of performance of their jobs.
13. The findings revealed that around 83.00 per cent of the respondents had less favourable to favourable attitude towards ATMA. Only a small proportion of them were found with highly favourable attitude towards ATMA. Attitude is an enduring system of positive and negative evaluation, emotional feelings and pros and cons action tendencies with respect

to certain social or psychological objects. A highly favourable attitude of the extension personnel towards ATMA increases the possibility that they will perform their roles better than those who have unfavourable attitude. For an enhanced level of role performance, the need for creating a highly favourable attitude of extension personnel towards ATMA is very essential.

14. The mean job anxiety value indicated that on an average the respondents had medium level of job anxiety. Anxiety means disturbance of mind towards some uncertain event, misgiving worry, strained or solicitous desire as for some object or purpose or eagerness. It refers to the feeling of the extension personnel pertaining to the various constituents of their job such as job security, recognition and fair evaluation, human relation at work, future prospects, capacity and confidence to shoulder job responsibilities. An effective management strategy for organizational performance should aim to reduce the level of job anxiety of the extension personnel for increased level of performance of their jobs.

5.5 Suggestions for further research

As far as future research is concerned, the following is recommended:

1. That this study may be extended to other regions or to verify whether or to what degree the findings in study area also apply to other regions.
2. That this study was conducted based on the expressed opinion of the Agricultural Development Officers who have worked as conveners in the respective Block Resource Centres of the sampled ATMA districts. If time and other resource constraints allow, it is advisable to include the views of other stakeholders such as farmers, policy makers and extension administrators at various levels of the organization.
3. That effort be made to find more objective scales and criteria for measuring level of performance of the extension personnel. This would not only serve the purpose of more accurate analyses of the data and interpretation of the findings, but could also be used for evaluation or assessment of performance of the extension personnel.
4. That in this study, 10 independent variables included in the regression analysis could predict 82.50 per cent of the variation in the level of role performance of the extension personnel. Thus a considerable portion of the variation in the level of role performance remained unexplained. There is, hence, scope for further research in this regard by considering more number of relevant variables which may explain or predict the level of role performance of the extension personnel in more effective manner.
5. That this study was carried out in 11 ATMA districts of Assam. For arriving at wider generalization of the findings, similar research study may be taken up covering more districts and with a larger sample size.

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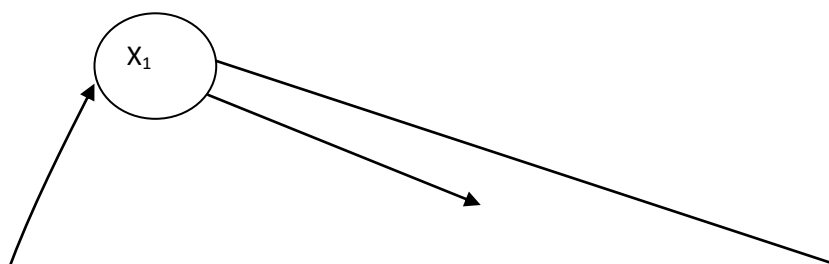
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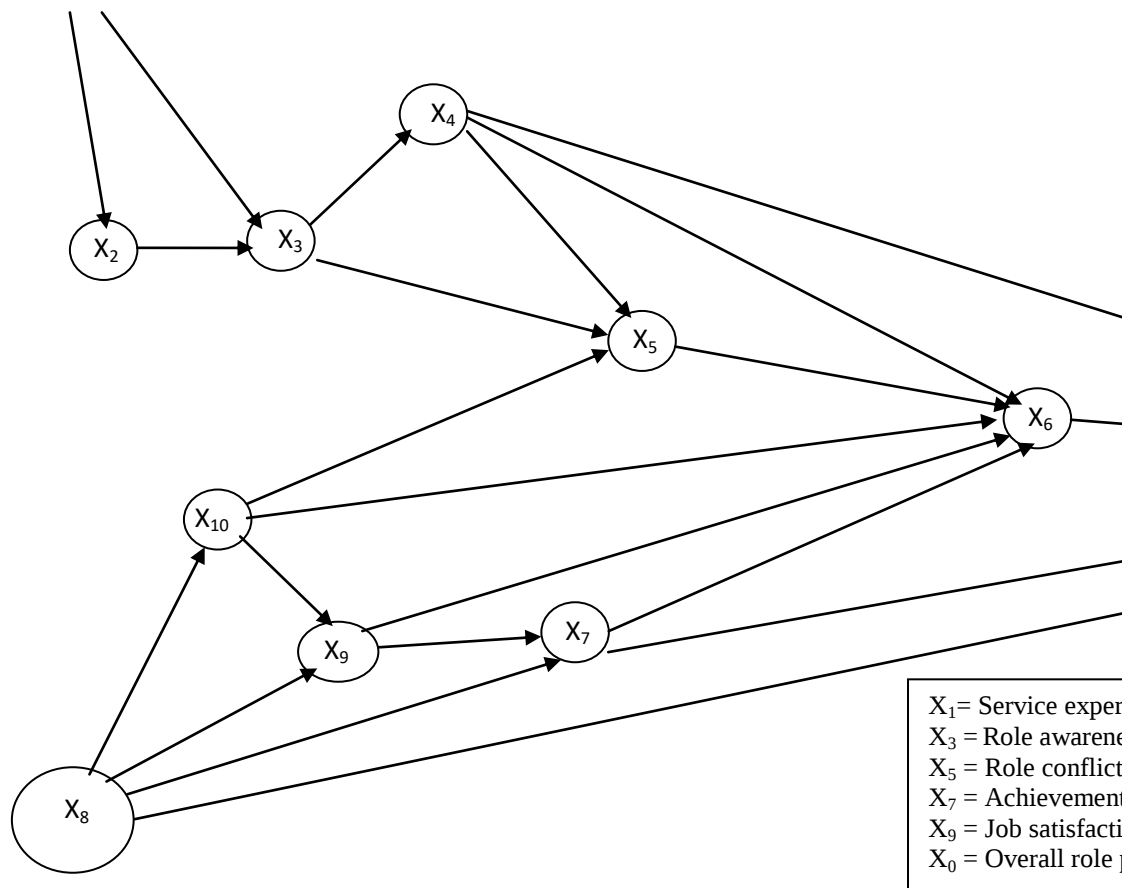
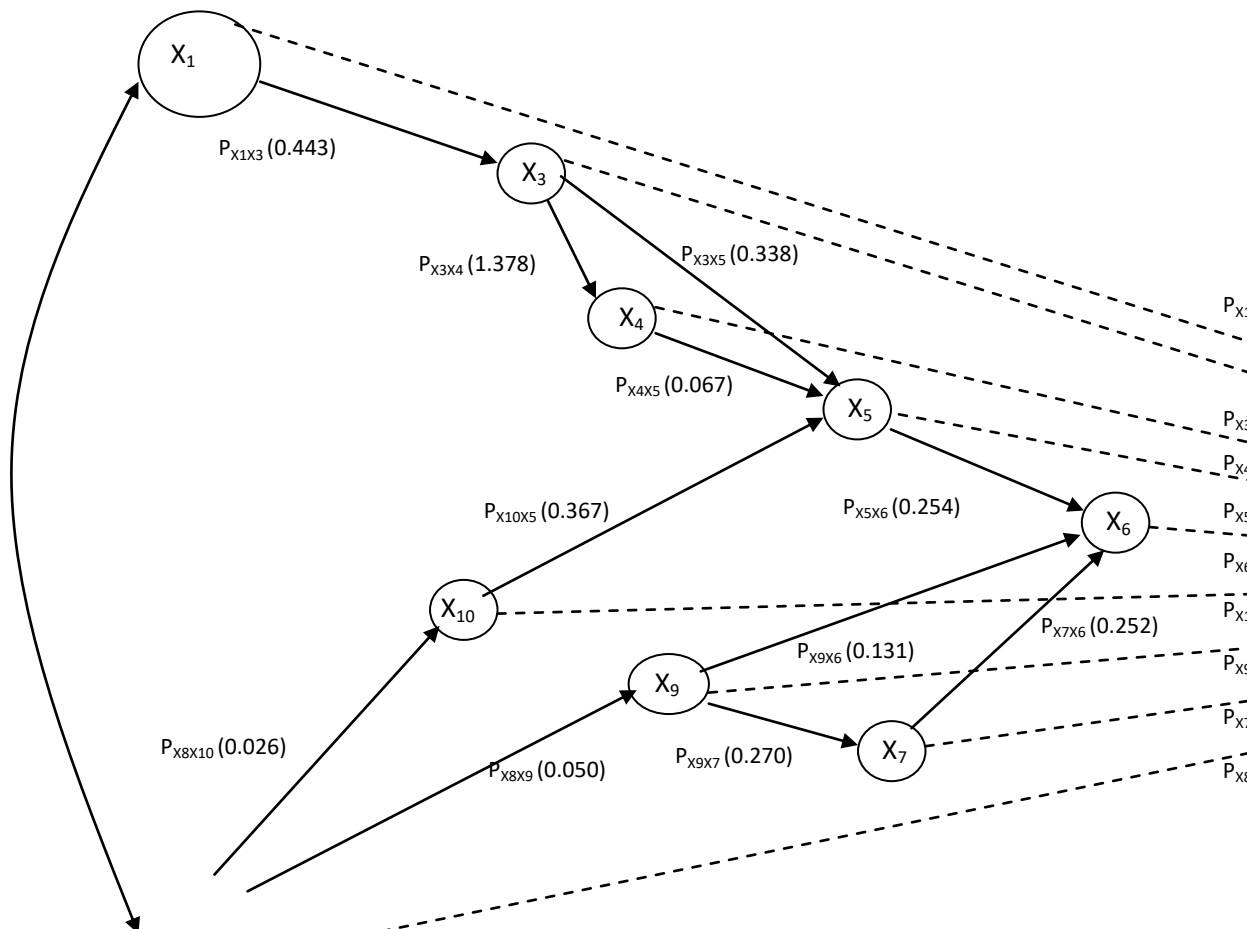


FIG. 4.5.15. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT OF SELECTED VARIABLES ON OVERALL ROLE PERFORMANCE



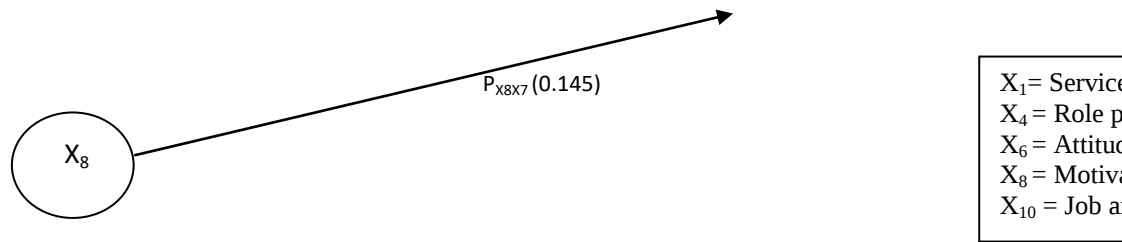


FIG. 4.5.16. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF S
PERFORMANCE

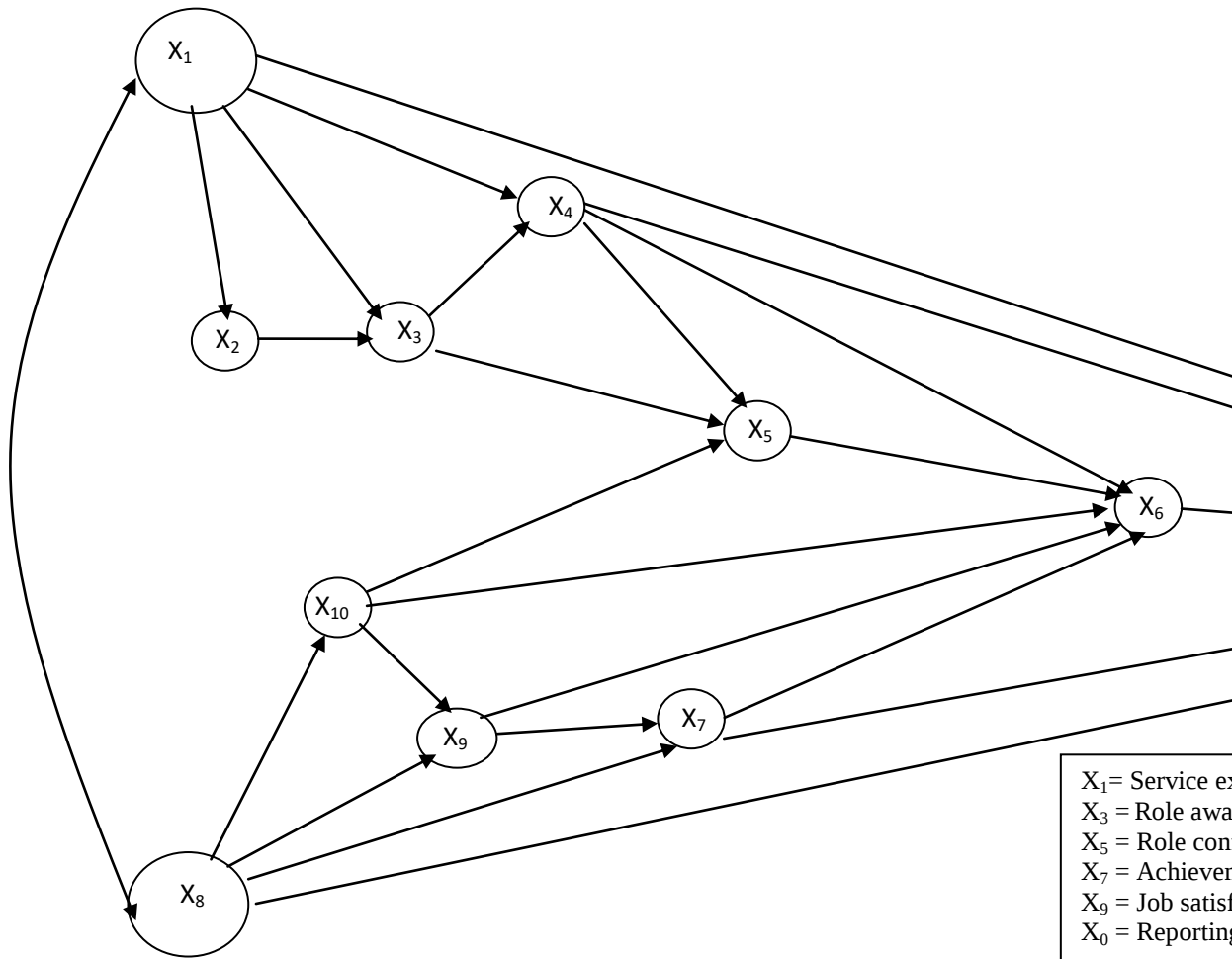
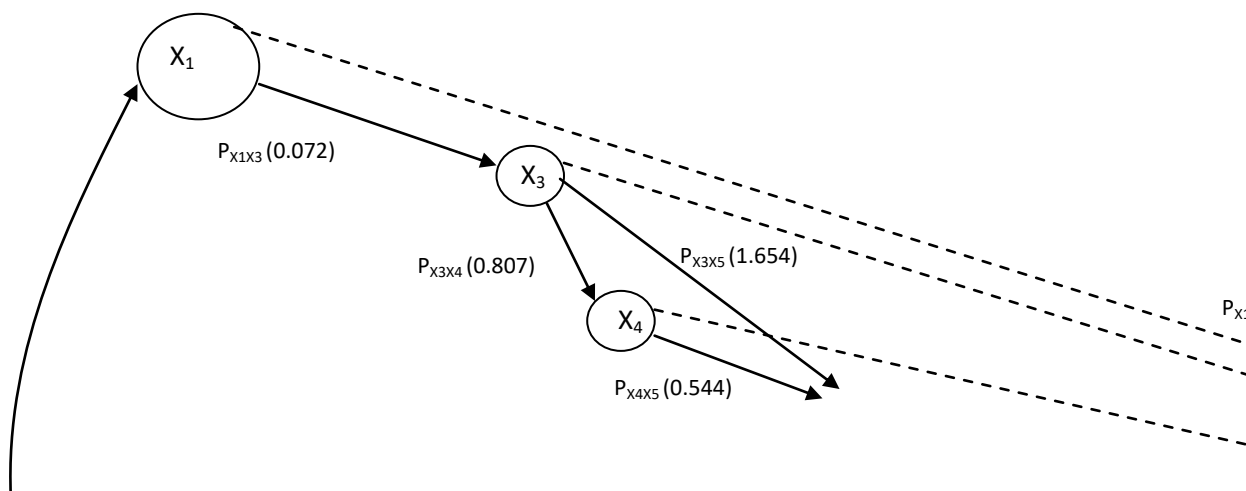


FIG. 4.5.11. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT O
ROLE PERFORMANCE



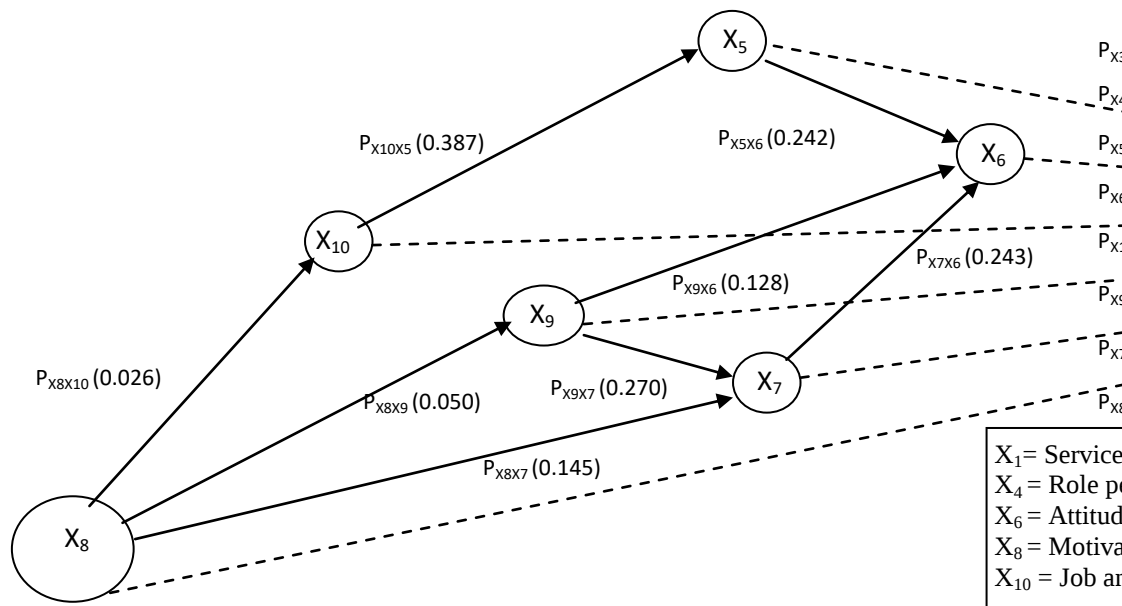


FIG. 4.5.12. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS ON ROLE PERFORMANCE

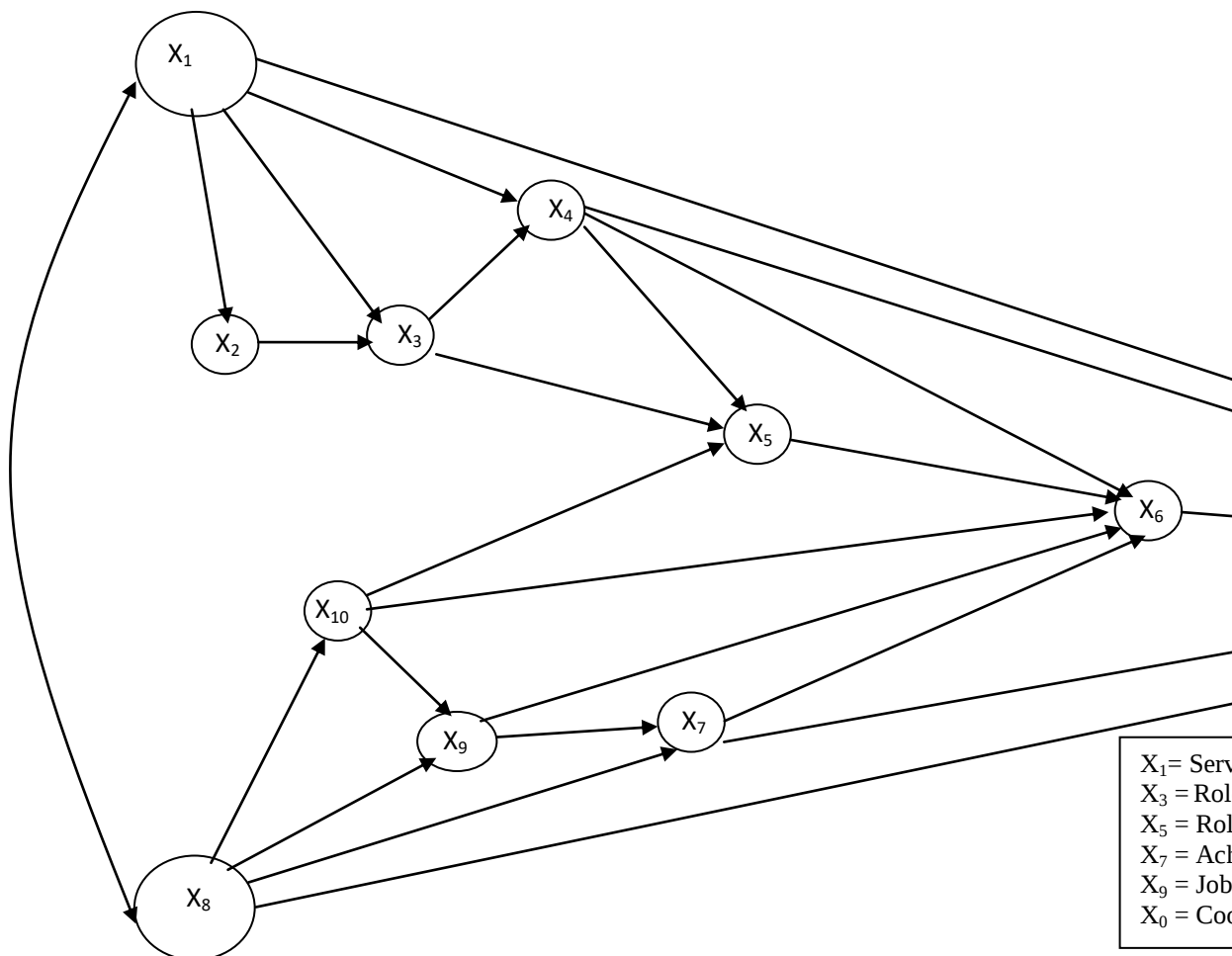
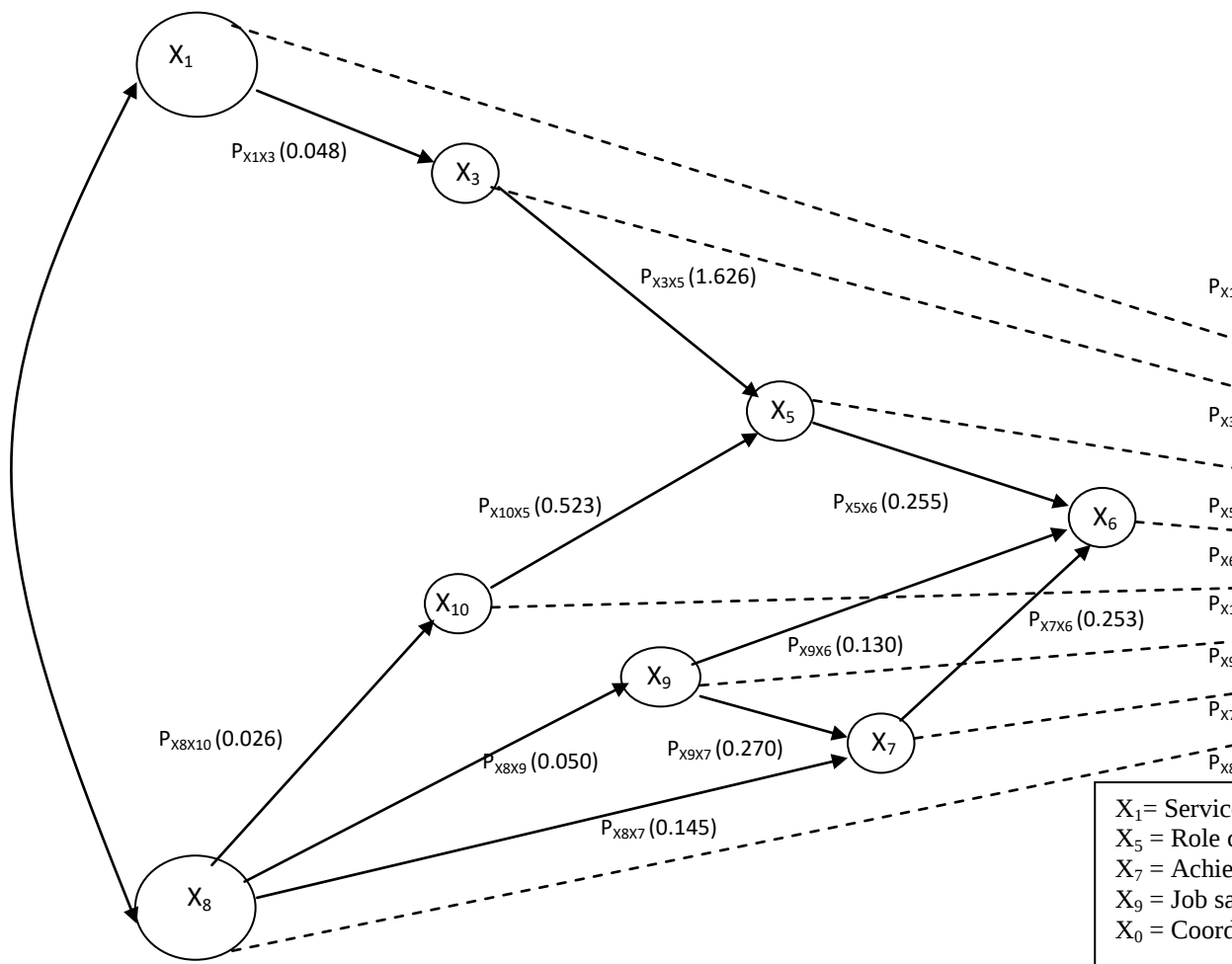
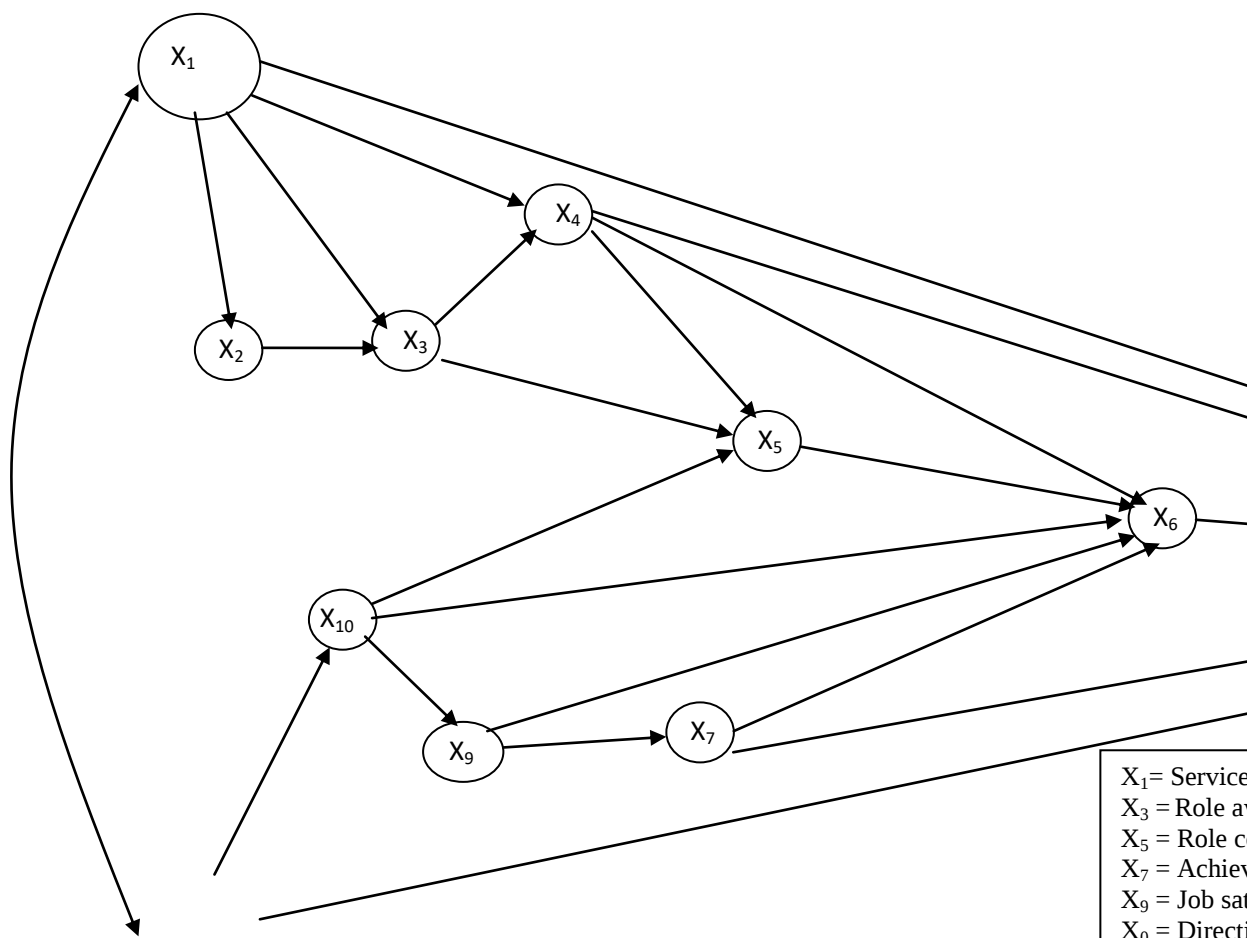


FIG. 4.5.9. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT EFFECTS ON COORDINATING ROLE PERFORMANCE



**FIG. 4.5.10. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF
ROLE PERFORMANCE**



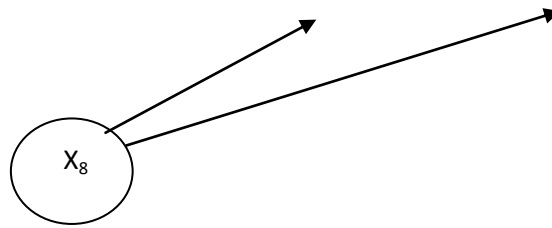


FIG. 4.5.7. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT EFFECTS OF ROLE PERFORMANCE

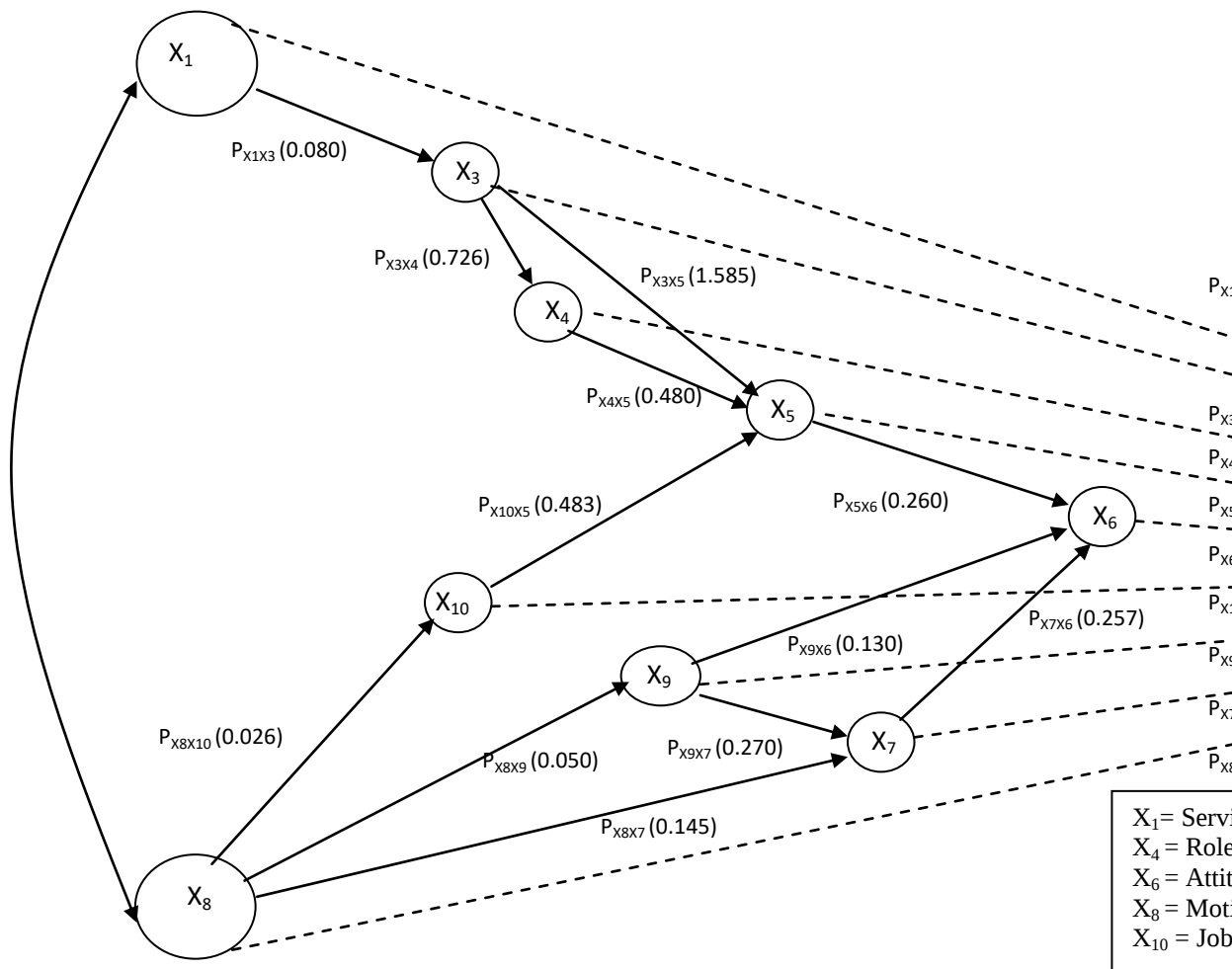
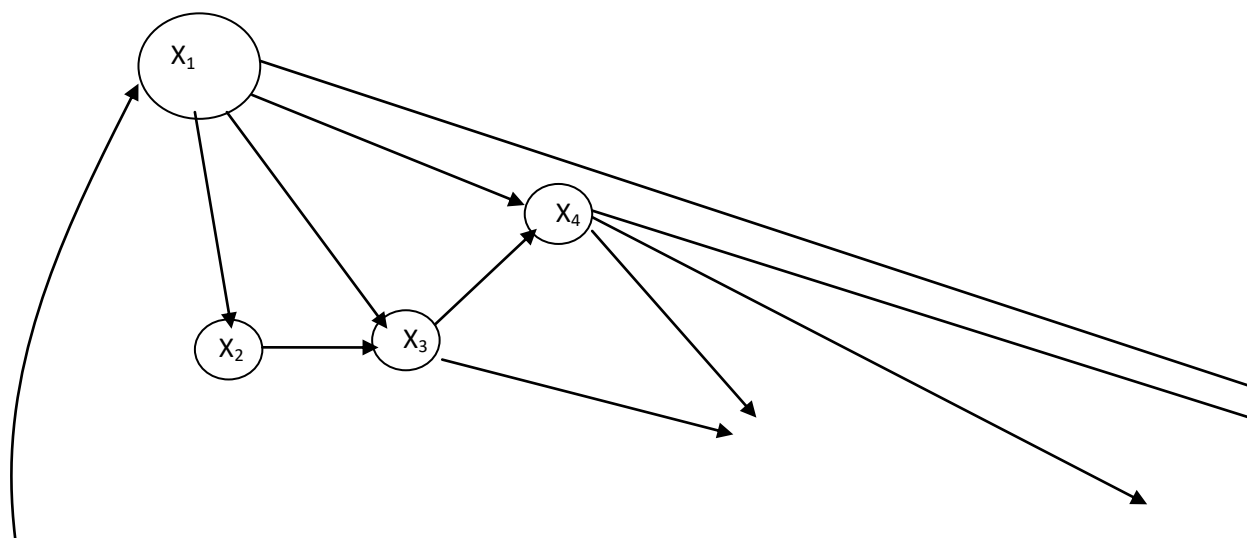


FIG. 4.5.8. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF SERVICE PERFORMANCE



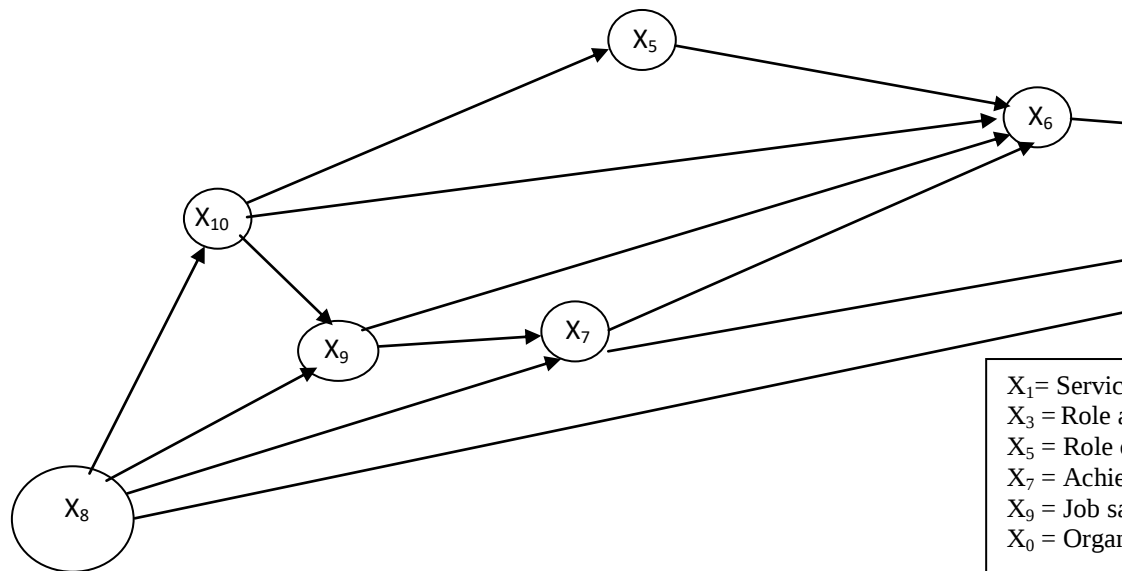


FIG. 4.5.3. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT ROLE PERFORMANCE

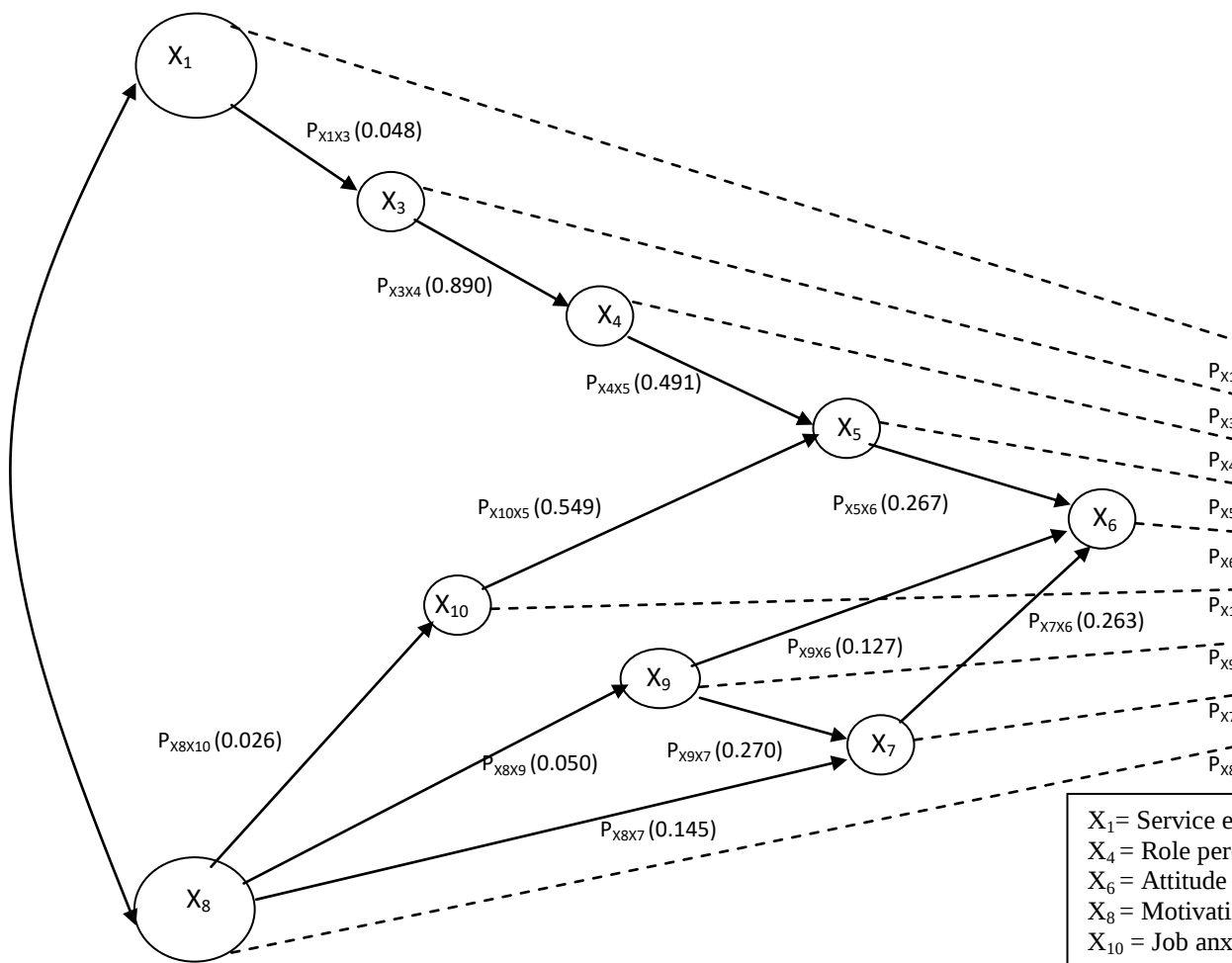


FIG. 4.5.4. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF SELECTED VARIABLES ON ORGANIZING ROLE PERFORMANCE

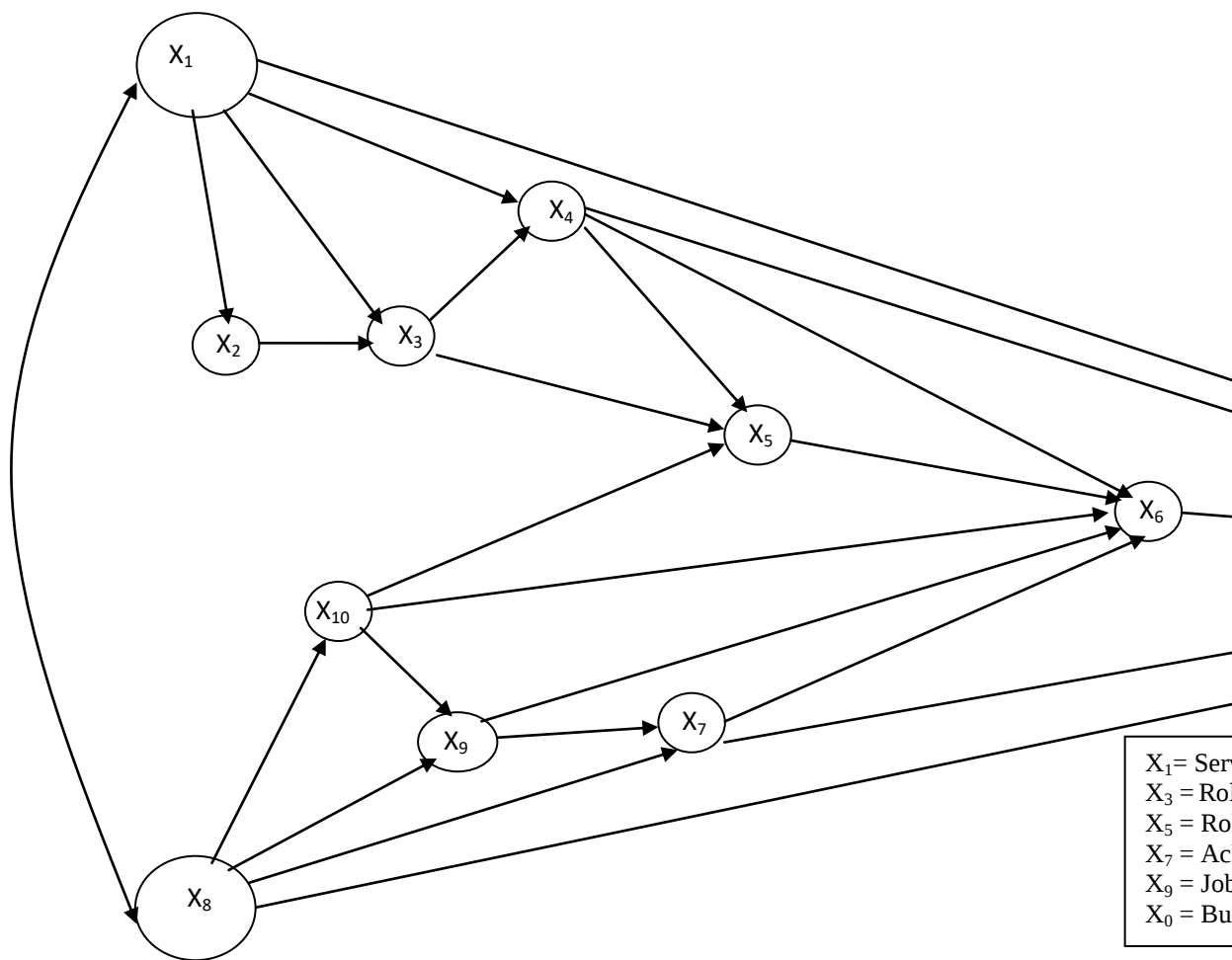
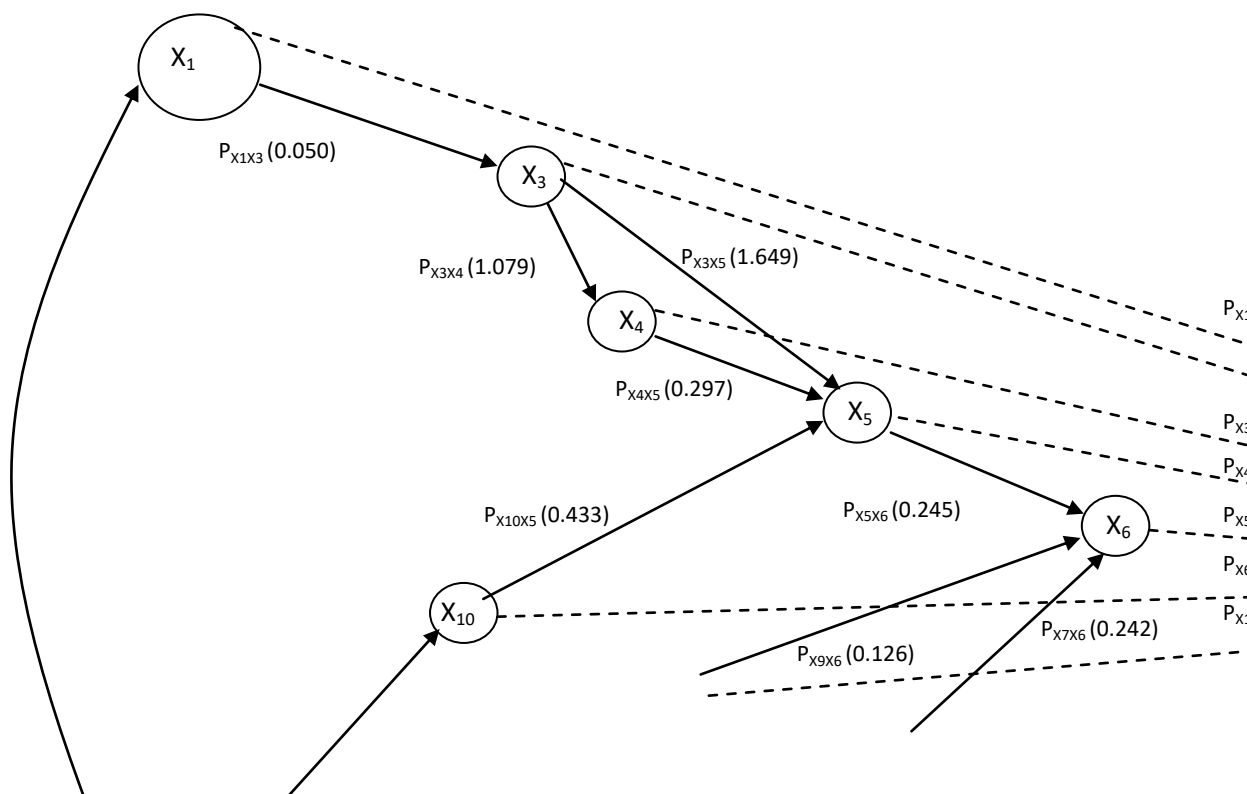


FIG. 4.5.13. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT ROLE PERFORMANCE



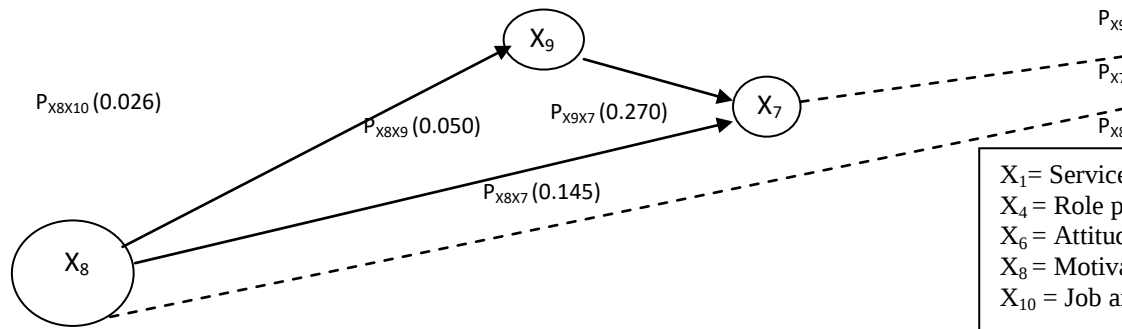


FIG. 4.5.14. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS ON ROLE PERFORMANCE

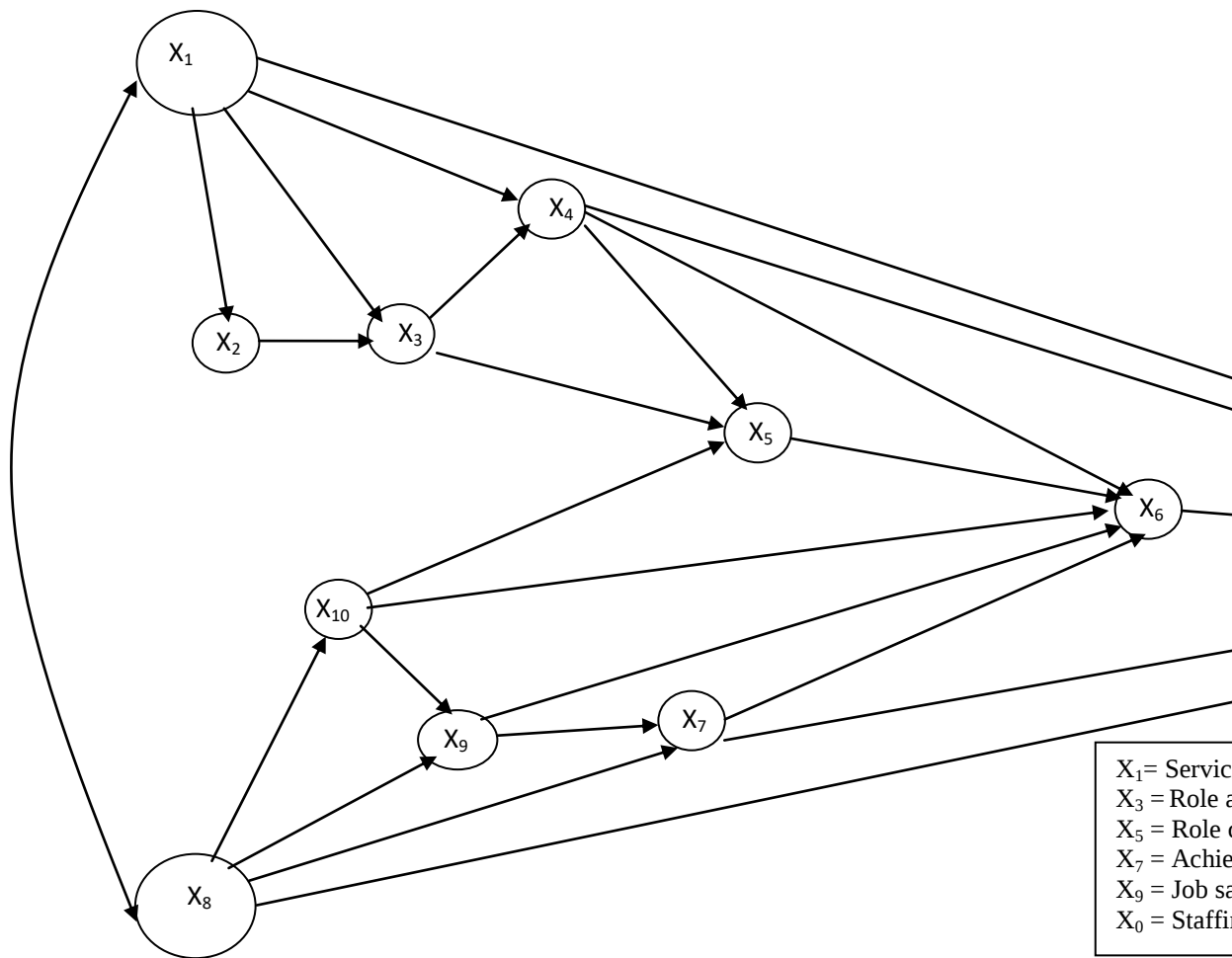
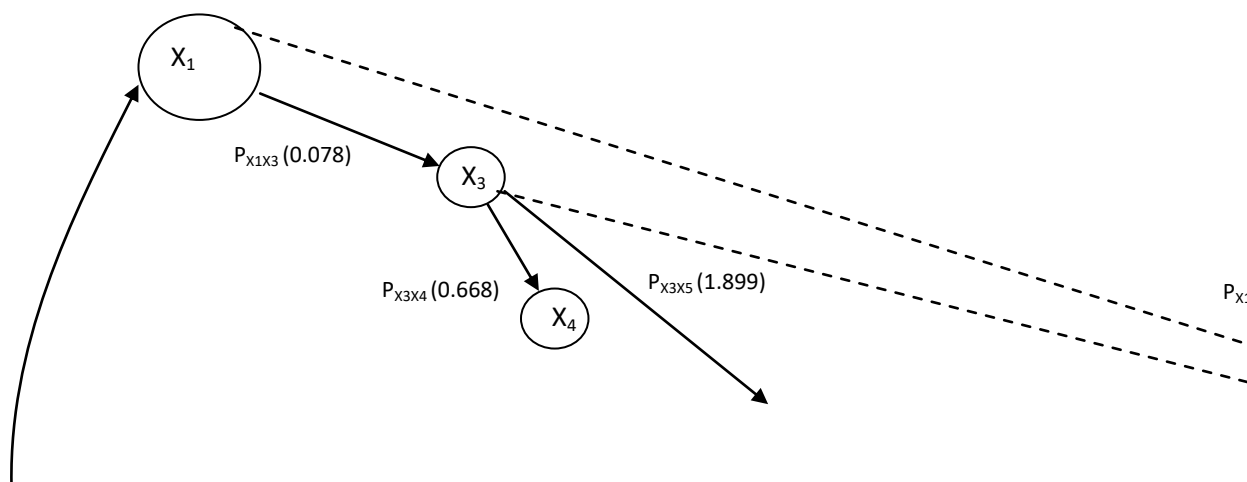


FIG. 4.5.5. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT OF SELECTED VARIABLES ON STAFFING ROLE PERFORMANCE



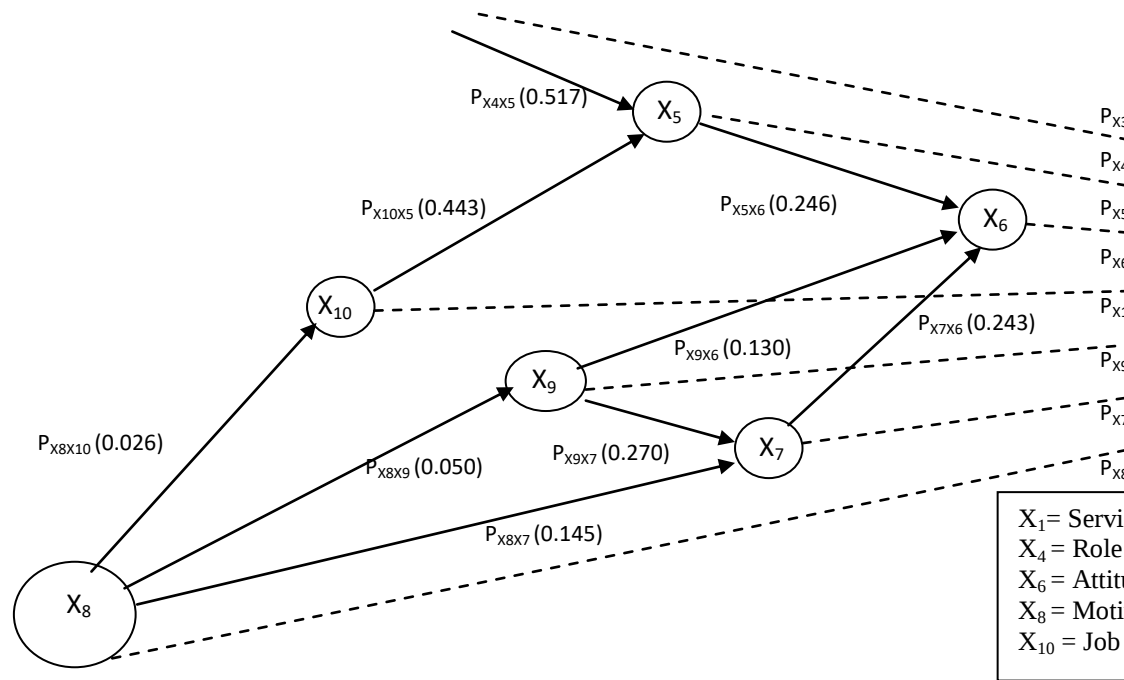


FIG. 4.5.6. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF SELECTED VARIABLES ON STAFFING ROLE PERFORMANCE

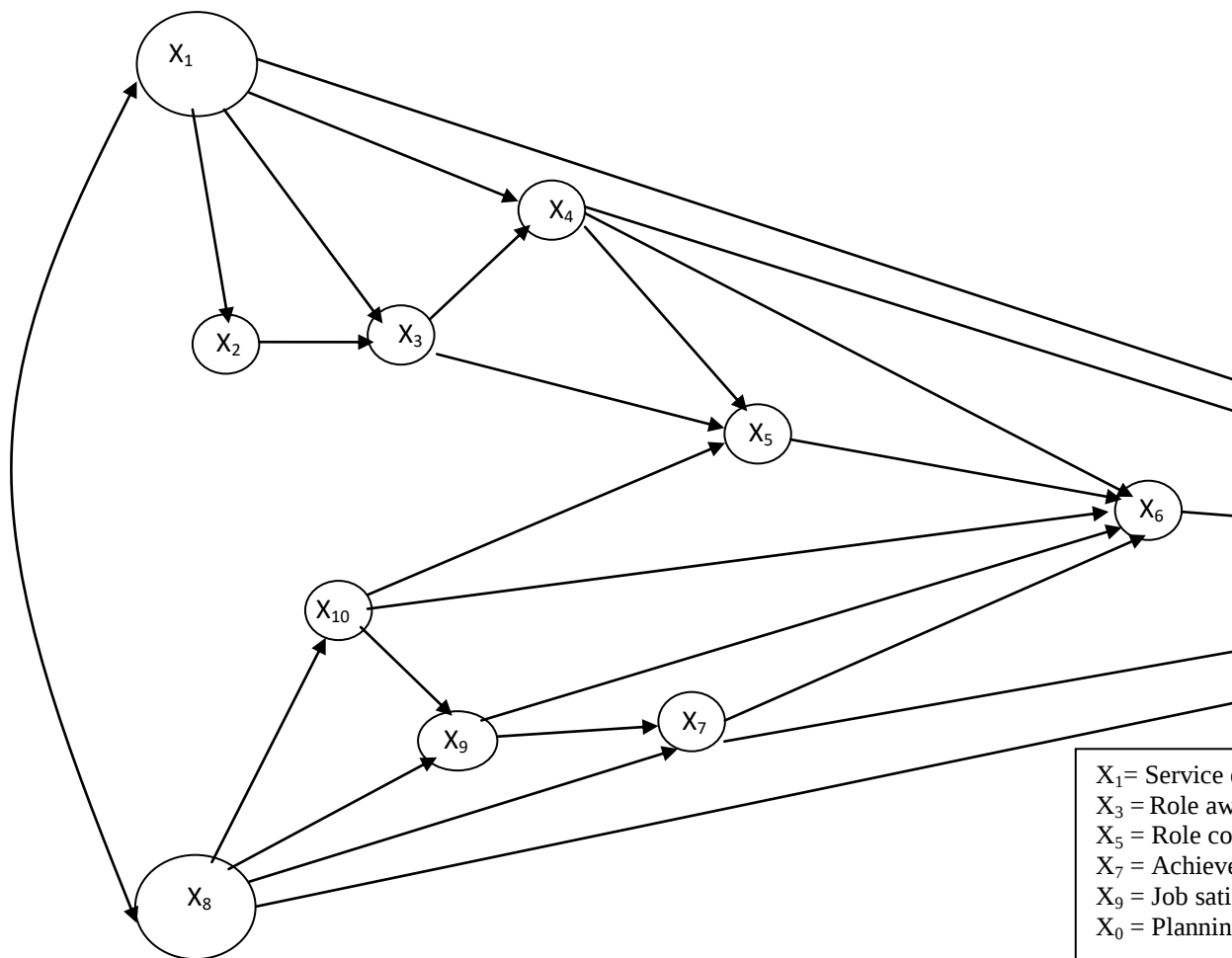


FIG. 4.5.1. HYPOTHETICAL PATH MODEL SHOWING DIRECT AND INDIRECT OF SELECTED VARIABLES ON PLANNING ROLE PERFORMANCE

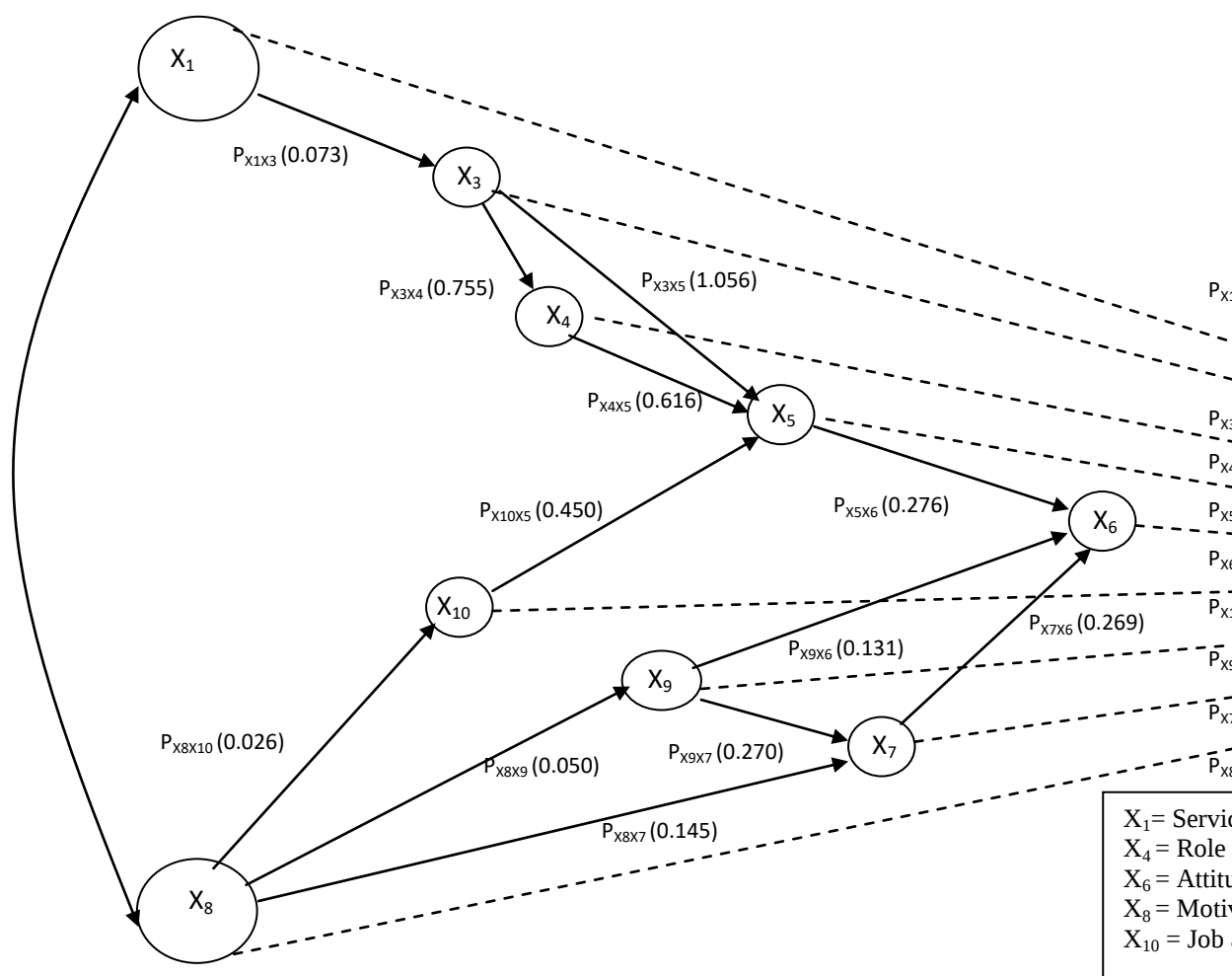


FIG. 4.5.2. PATH DIAGRAM SHOWING DIRECT AND INDIRECT EFFECTS OF SELECTED VARIABLES ON PLANNING ROLE PERFORMANCE

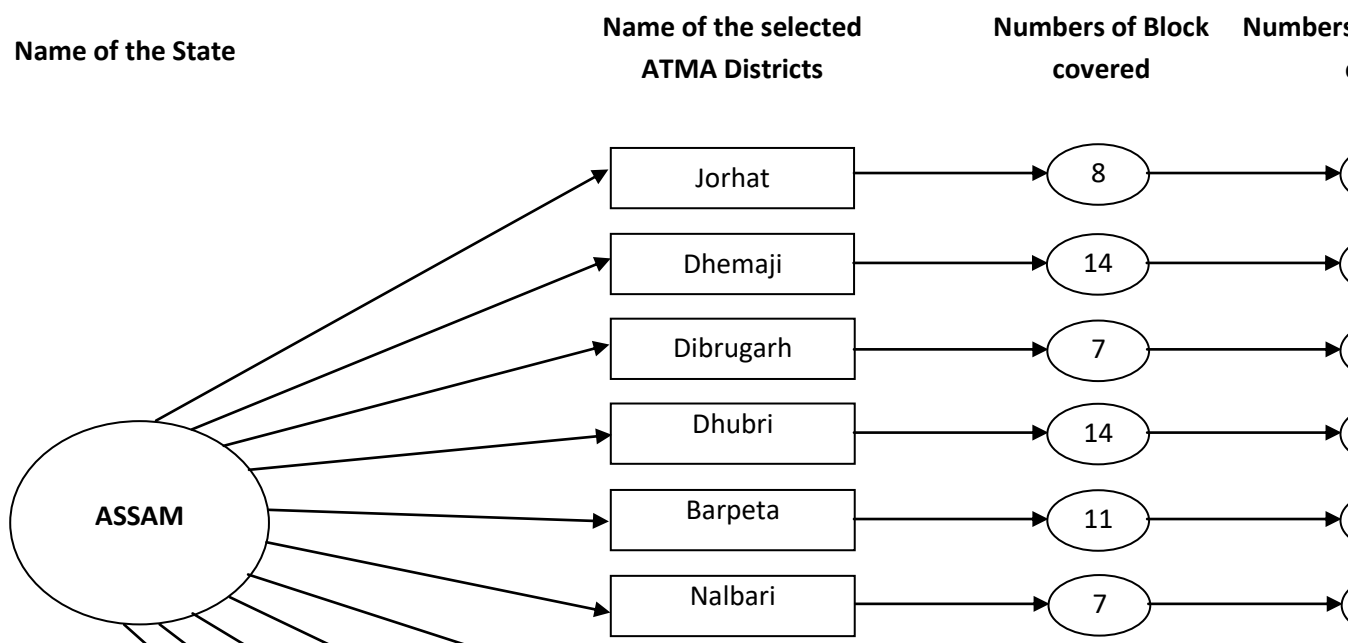


FIG. 3.2.2. SAMPLING PLAN OF THE STUDY

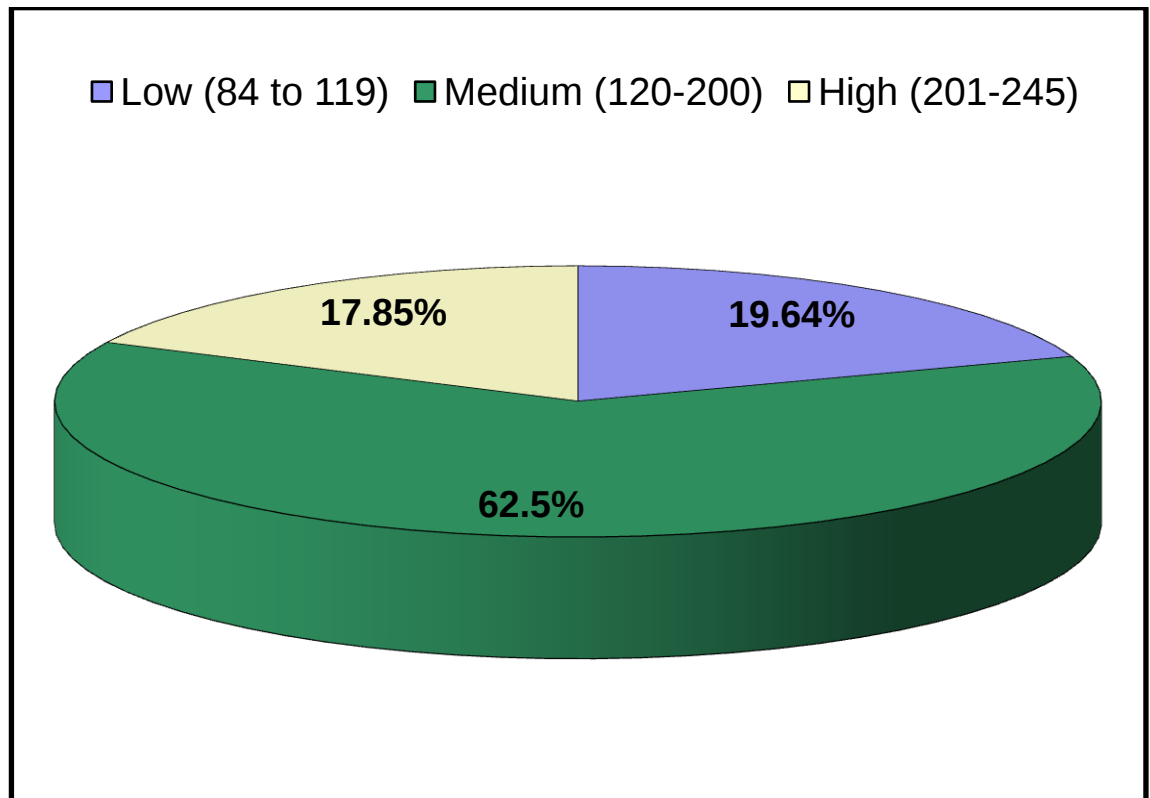


FIG. 4.2.1. DISTRIBUTION OF RESPONDENTS ACCORDING TO THEIR LEVEL OF ROLE PERFORMANCE

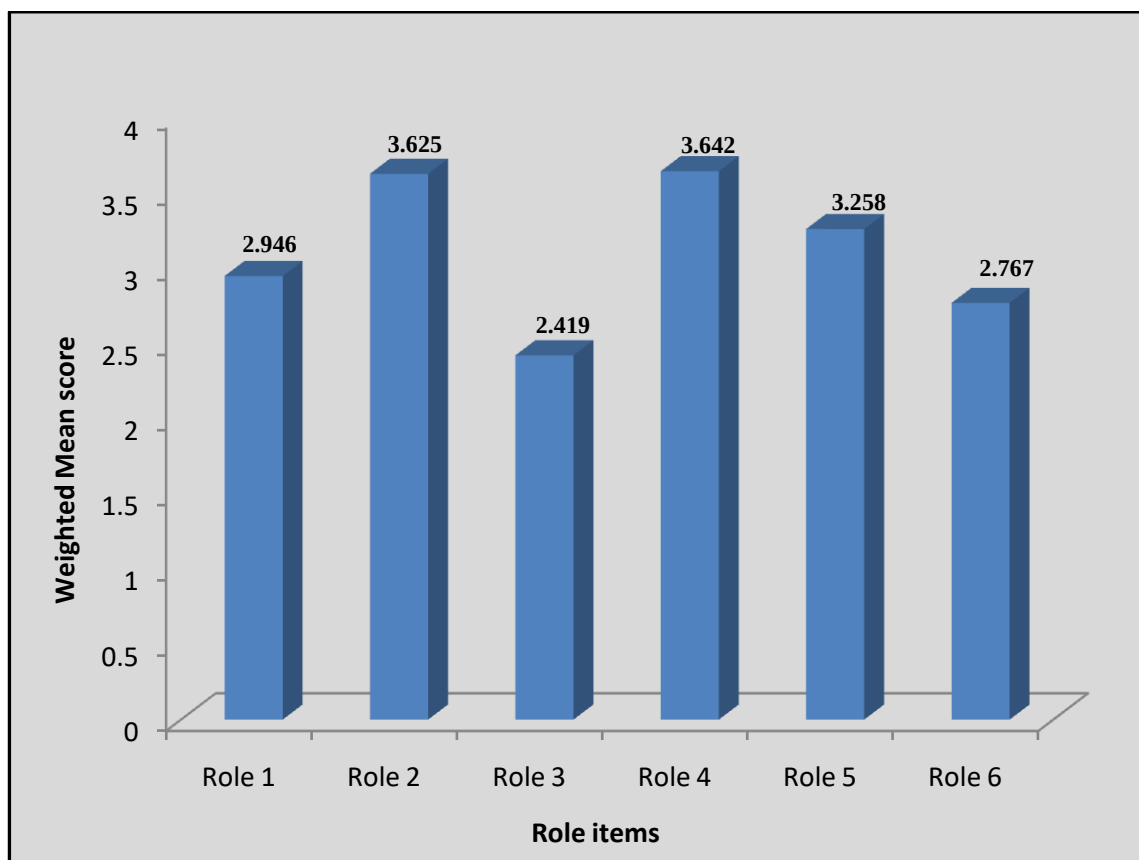


FIG. 4.2.2. PERFORMANCE OF ROLE ITEMS UNDER PLANNING DIMENSION

Role 1 : Helping district core team in up gradation of SREP

Role 2 : Preparation of Block Action Plan (BAP)

Role 3 : Carrying out socio-economic analysis for group formation

Role 4 : Identification and prioritization of needs and interest of the farmers

Role 5 : Developing module for capacity building programmes

Role 6 : Exploring new area of farming having present and future prospects



FIG. 4.2.3. PERFORMANCE OF ROLE ITEMS UNDER ORGANIZING DIMENSION

Role 1 : Operationalising SREP in each block

Role 2 : Facilitating farmers organization at block level

Role 3 : Organizing capacity building programmes for farmers and farmers' group

Role 4 : Organizing farmer's meeting in setting aims and objectives

Role 5 : Organizing exhibition, kissan mela, fruits/ vegetable show

Role 6 : Establishing linkages for convergence with line department

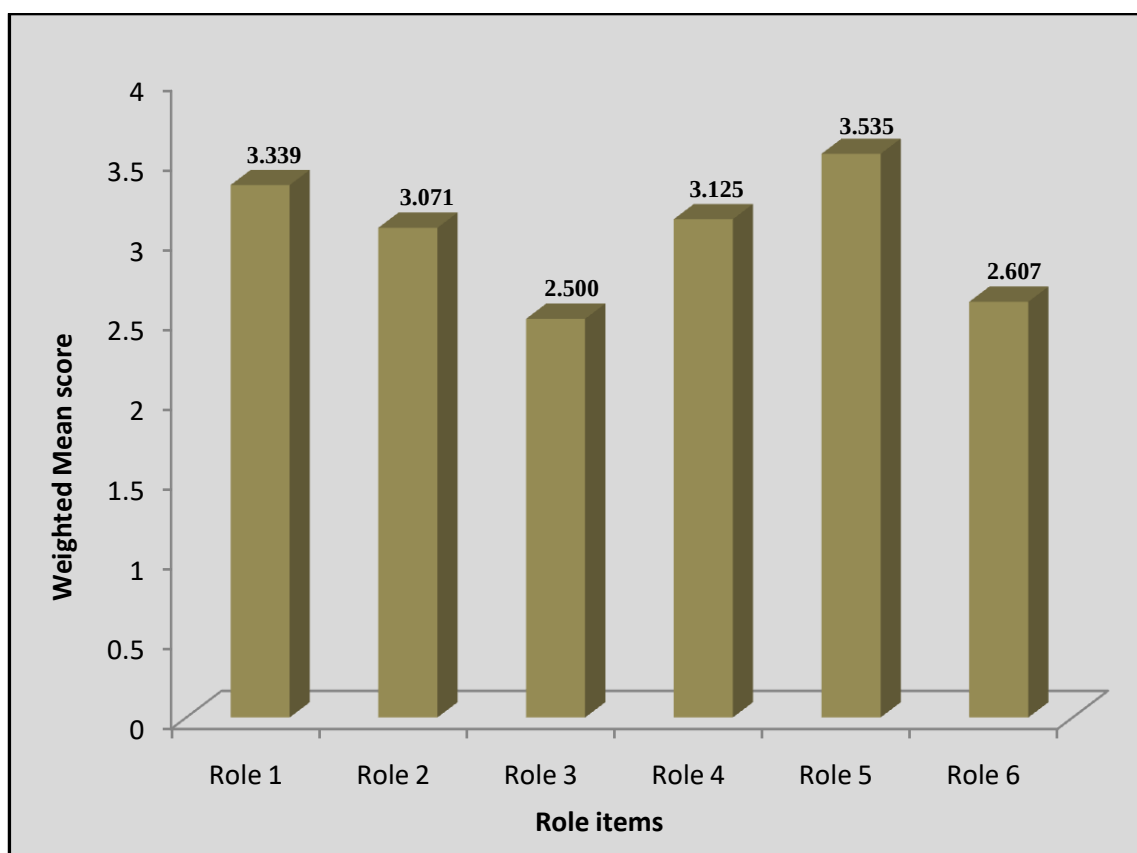


FIG. 4.2.4. PERFORMANCE OF ROLE ITEMS UNDER STAFFING DIMENSION

Role 1 : Selection of beneficiaries in consultation with farmers' advisory committee and village panchayats

Role 2 : Helping farmers' group in selection of its members

Role 3 : Identification and development of leader for farmers group

Role 4 : Identification of farmers and farmers' group for rewards and incentives

Role 5 : Helps in formation of Farm Information and Advisory Centre

Role 6 : Identification of resource persons for capacity building programmes

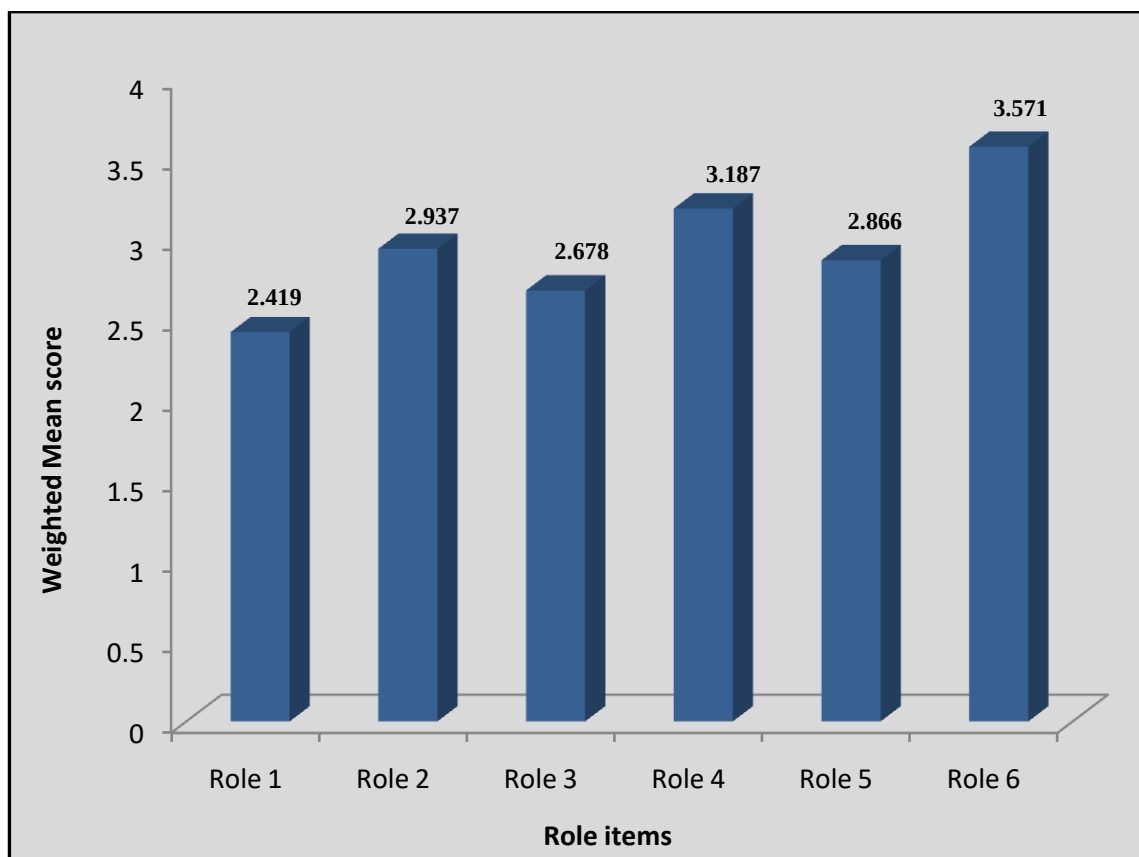


FIG. 4.2.5. PERFORMANCE OF ROLE ITEMS UNDER DIRECTING DIMENSION

Role 1 : Intimating farmers and resource persons for the capacity building programmes

Role 2 : Facilitating farmer to farmer technology dissemination and learning

Role 3 : Helping farmers in getting necessary inputs from the service centre

Role 4 : Helping farmers' groups in maintaining sustainability and leadership

Role 5 : Detailing the activities to be carried out by farmers' advisory committee

Role 6 : Providing timely and relevant information to farmers

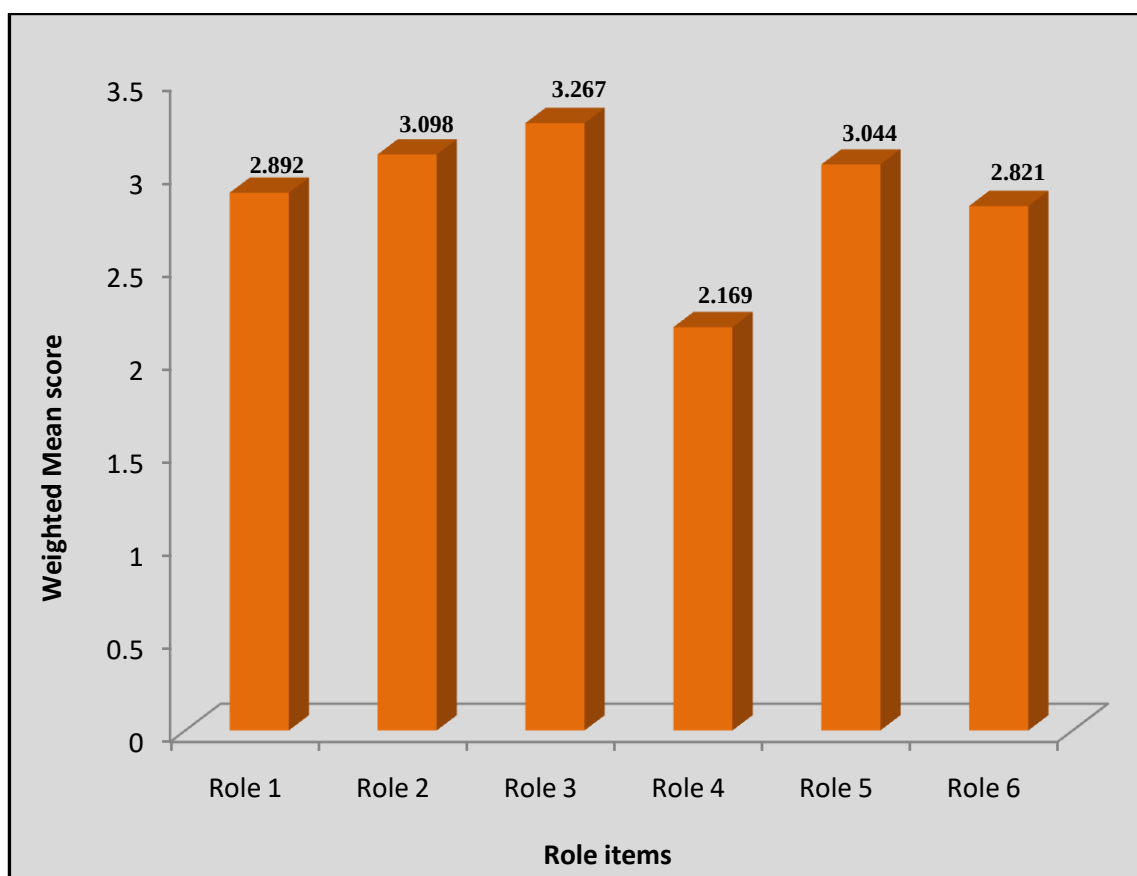


FIG. 4.2.6. PERFORMANCE OF ROLE ITEMS UNDER COORDINATING DIMENSION

Role 1 : Coordinating the implementation of extension programmes detailed in BAP

Role 2 : Coordinating block meeting to discuss the issues brought by farmers' advisory committee

Role 3 : Coordinating assessment, refinement, validation and adoption of front line

technologies with local research centres

Role 4 : Monitoring the functioning of farmers' group on a regular basis

Role 5 : Helps in federation of farmers' group from block to district level

Role 6 : Helps in establishing information portals for information sharing

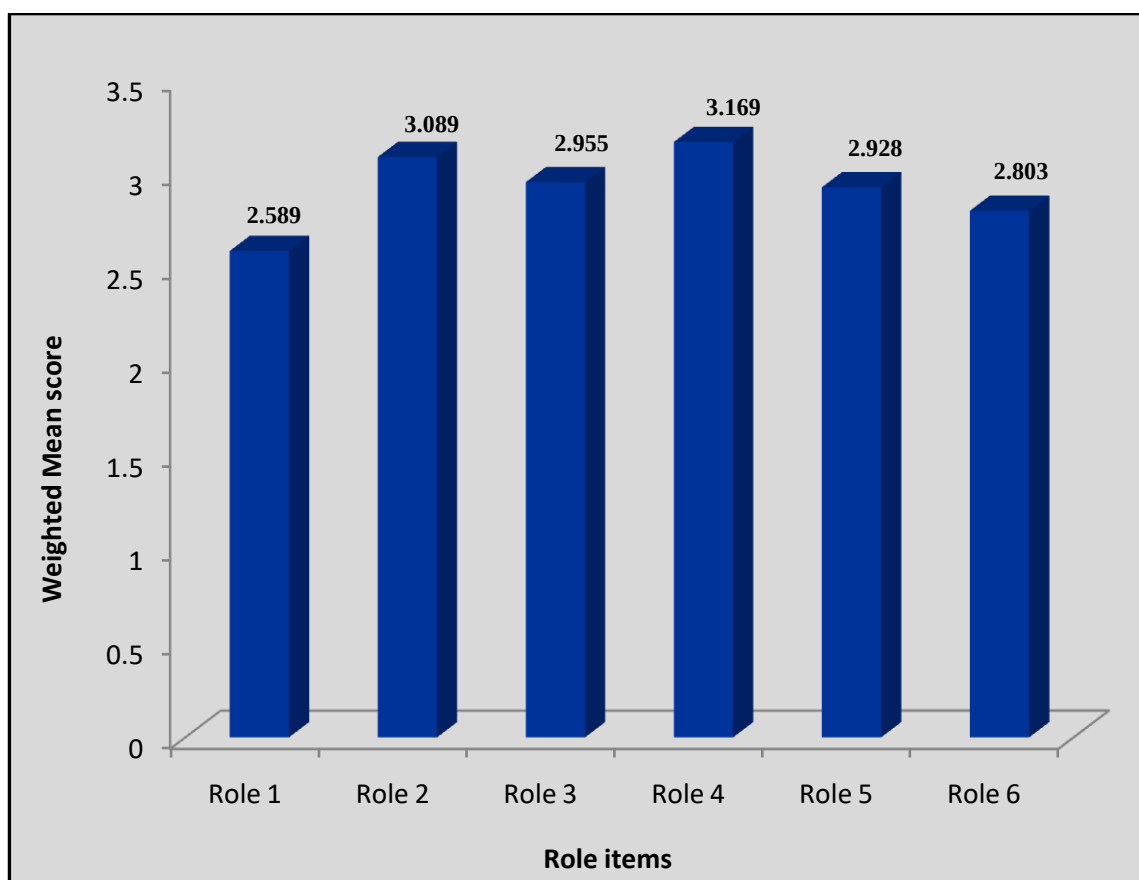


FIG. 4.2.7. PERFORMANCE OF ROLE ITEMS UNDER REPORTING DIMENSION

Role 1 : Documentation and publication of success stories of farmers

Role 2 : Reporting farmers' feed back in block meeting

Role 3 : Keeping inventory of all the beneficiary farmers and farm related activities in the operational area

Role 4 : Supporting ATMA management committee in discharging its function

Role 5 : Compiling report on reviewing of progress and reporting the same to ATMA Management Committee

Role 6 : Submission of work plans to State Level sanctioning Committee

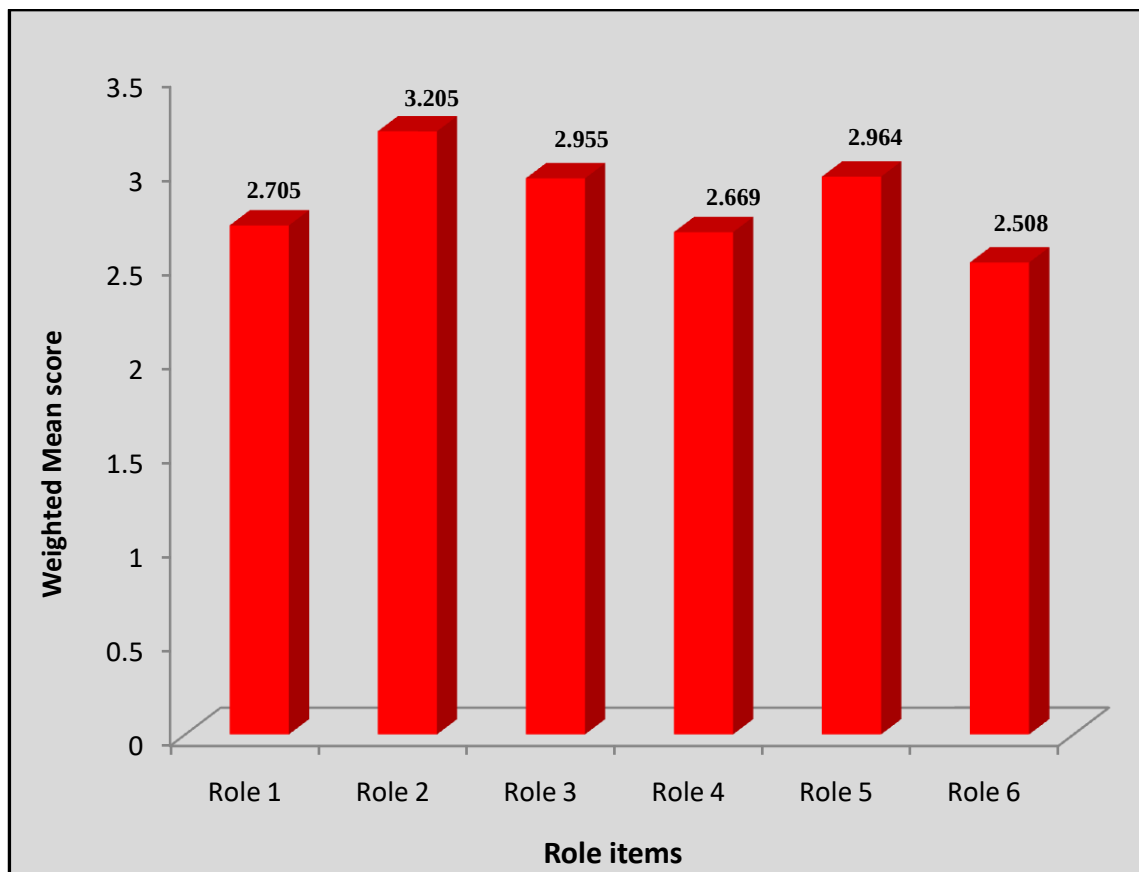


FIG. 4.2.8. PERFORMANCE OF ROLE ITEMS UNDER BUDGETING DIMENSION

Role 1 : Working on the credit appraisal and getting approval for the activities to be carried out

Role 2 : Maintaining proper record and account for the activities carried out

Role 3 : Provisioning rewards and incentives for successful famer(s)/ groups

Role 4 : Provisioning seed money/revolving fund for functioning of farmers' group

Role 5 : Compiling report on utilization of fund and the physical progress of work

Role 6 : Mobilizing fund needed for documentation and publication of success stories

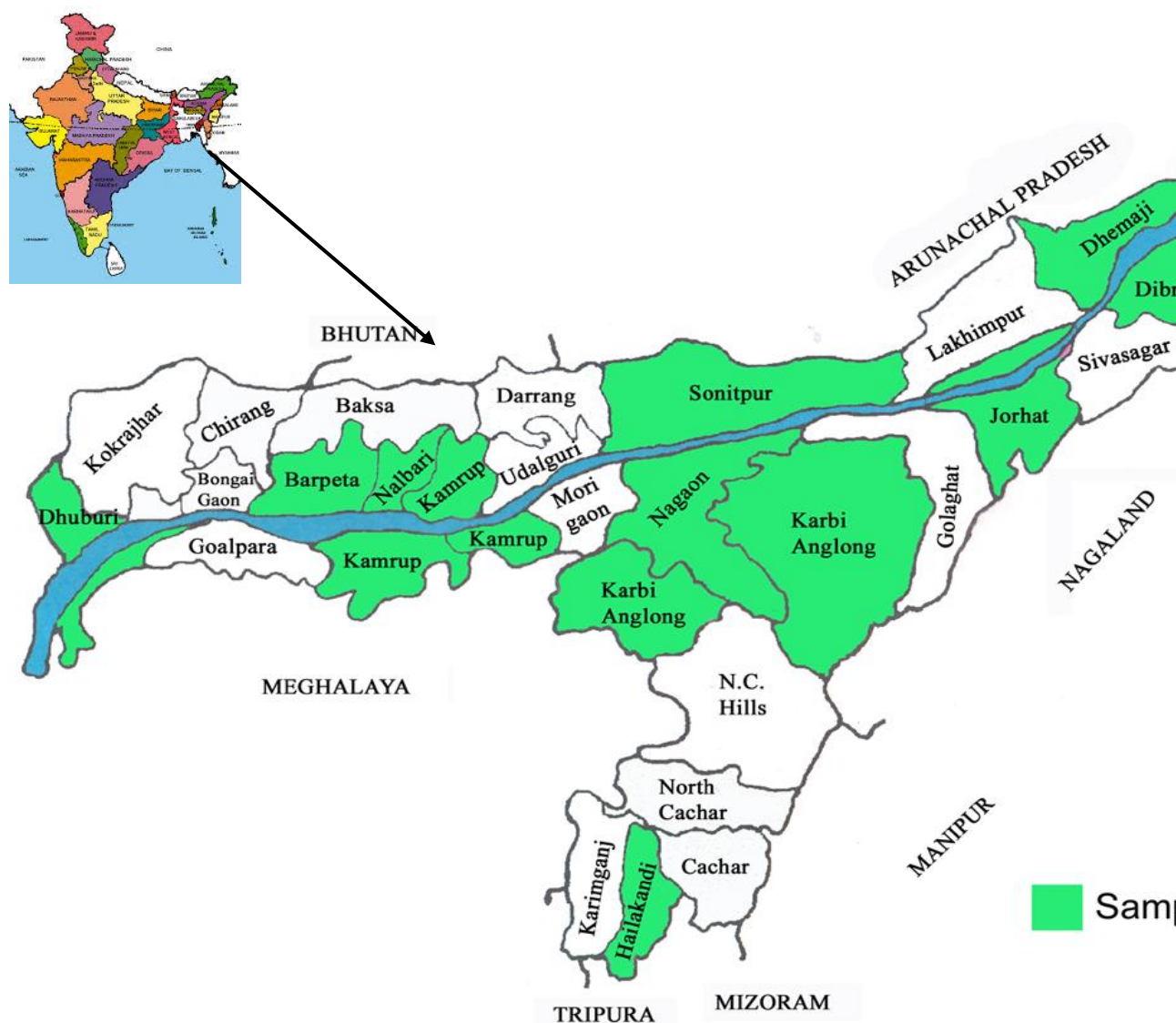


FIG. 3.2.1. MAP OF ASSAM SHOWING THE ATMA DISTRICTS COVERED IN THE STUDY

Table 4.1.1. Distribution of respondents according to their age

N = 112

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
----------	-------------	-----------	----------------	------	-----	-----

Young aged	32- 36 years	20	17.85			
Middle aged	37 to 50 years	69	61.61	42.89	6.89	16.06
Old aged	51 to 58 years	23	20.54			

Table 4.1.2. Distribution of respondents according to their educational qualification

N = 112

Category	Score	Frequency	Percentage (%)	Mean	S.D	C.V
B.Sc. (Agri.) passed	1	52	46.43	1.53	0.50	32.68
M.Sc. (Agri.) passed	2	60	53.57			

Table 4.1.3. Distribution of respondents according to their service experience

N = 112

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Short	4 to 6 years	13	11.61	12.02	4.92	40.93
Medium	7 to 17 years	82	73.21			
Long	18 to 25 years	17	15.18			

Table 4.1.4. Distribution of respondents according to their training exposure

N = 112

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low training exposure	12 to 16 days	6	5.36	29.82	12.57	42.15
Medium training exposure	17 to 42 days	87	77.68			
High training exposure	43 to 66 days	19	16.96			

Table 4.1.5. Distribution of respondents according to their decision making ability**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low decision making ability	12 to 23	7	6.25			
Medium decision making ability	24 to 34	86	76.79	29.25	5.09	17.40
High decision making ability	35 to 38	19	16.96			

Table 4.1.6. Distribution of respondents according to their level of role awareness**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low role awareness	11 to 16	21	18.75			
Medium role awareness	17 to 31	77	68.75	23.91	6.82	28.52
High role awareness	32 to 42	14	12.50			

Table 4.1.7. Distribution of respondents according to their level of role perception**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low role perception	28 to 49	17	15.18			
Medium role perception	50 to 89	80	71.43	69.08	19.52	28.26
High role perception	90 to 126	15	13.39			

Table 4.1.8. Distribution of respondents according to their level of job involvement**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low job involvement	18 to 28	22	19.64			
Medium job involvement	29 to 53	71	63.39	40.98	11.56	28.21
High job involvement	54 to 70	19	16.96			

Table 4.1.9. Distribution of respondents according to their level of role conflict**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low role conflict	15 to 24	21	18.75			
Medium role conflict	25 to 42	71	63.39	33.46	8.45	25.25
High role conflict	43 to 51	20	17.86			

Table 4.1.10. Distribution of respondents according to their level of role ambiguity**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low role ambiguity	21 to 30	21	18.75			
Medium role ambiguity	31 to 48	66	58.93	39.32	8.21	20.88
High role ambiguity	49 to 53	25	22.32			

Table 4.1.11. Distribution of respondents according to their attitude towards ATMA**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Less favourable attitude	23 to 40	19	16.96			
Favourable attitude	41 to 68	74	66.07	54.42	13.74	25.25
Highly favourable attitude	69 to 86	19	16.96			

Table 4.1.12 Distribution of respondents according to their level of achievement motivation**N = 112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low achievement motivation	27 to 45	20	17.86			
Medium achievement motivation	46 to 78	75	66.96	61.59	15.92	25.85
High achievement motivation	79 to 92	17	15.18			

Table 4.1.13. Distribution of respondents according to their motivational climate**N=112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Less favourable motivational climate	89 to 123	23	20.54			
Favourable motivational climate	124 to 208	66	58.93	166.10	41.97	25.27
Highly favourable motivational climate	209 to 242	23	20.54			

Table 4.1.14. Distribution of respondents according to their job satisfaction**N=112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Less satisfied	28 to 46	21	18.75	61.82	15.01	24.28
Moderately satisfied	47 to 77	74	66.07			
Highly satisfied	78 to 96	17	15.18			

Table 4.1.15. Distribution of respondents according to their job anxiety**N=112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low job anxiety	3 to 6	22	19.64	10.50	3.44	32.76
Medium job anxiety	7 to 14	73	65.18			
High job anxiety	15 to 16	17	15.18			

Table 4.2.1. Distribution of respondents according to their level of role performance**N=112**

Category	Score range	Frequency	Percentage (%)	Mean	S.D	C.V
Low level of role performance	84 to 119	22	19.64	160.37	39.81	24.82
Medium level of role performance	120 to 200	70	62.50			
High level of role performance	201 to 245	20	17.85			

Table 4.2.2. Performance of different role items by the respondents under planning dimension **N=112**

Role No	Role items	Weighted Mean score	Rank
1	Helping district core team in up gradation of SREP	2.946	IV
2	Preparation of Block Action Plan (BAP)	3.625	II
3	Carrying out socio-economic analysis for group formation	2.419	VI
4	Identification and prioritization of needs and interest of the farmers	3.642	I
5	Developing module for capacity building programmes	3.258	III
6	Exploring new area of farming having present and future prospects	2.767	V

Table 4.2.3. Performance of different role items by the respondents under organizing dimension **N=112**

Role No	Role items	Weighted Mean score	Rank
1	Operationalising SREP in each block	3.017	III
2	Facilitating farmers' organization at block level	2.839	IV
3	Organizing capacity building programmes for farmers and farmers' group	2.723	VI
4	Organizing farmer's meeting in setting aims and objectives	3.312	I
5	Organizing exhibition, kissan mela, fruits/vegetable show	3.062	II
6	Establishing linkages for convergence with line department	2.821	V

Table 4.2.4. Performance of different role items by the respondents under staffing dimension **N=112**

Role No	Role items	Weighted Mean score	Rank
1	Selection of beneficiaries in consultation with farmers' advisory committee and village panchayats	3.339	II
2	Helping farmers' group in selection of its members	3.071	IV
3	Identification and development of leader for farmers' group	2.500	VI
4	Identification of farmers and farmers' group for rewards and incentives	3.125	III
5	Helps in formation of Farm Information and Advisory Centre	3.535	I
6	Identification of resource persons for capacity building programmes	2.607	V

Table 4.2.5. Performance of different role items by the respondents under directing dimension **N=112**

Role No	Role items	Weighted Mean score	Rank
1	Intimating farmers and resource persons for the capacity building programmes	2.419	VI
2	Facilitating farmer to farmer technology dissemination and learning	2.937	III
3	Helping farmers in getting necessary inputs from the service centre	2.678	V
4	Helping farmers groups in maintaining sustainability and leadership	3.187	II
5	Detailing the activities to be carried out by Farmers advisory committee	2.866	IV

6	Providing timely and relevant information to farmers	3.571	I
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Table 4.2.6. Performance of different role items by the respondents under coordinating dimension
N=112

Role No	Role items	Weighted Mean score	Rank
1	Coordinating the implementation of extension programmes detailed in BAP	2.892	IV
2	Coordinating block meeting to discuss the issues brought by farmer's advisory committee	3.098	II
3	Coordinating assessment, refinement, validation of front line technologies with local research centres	3.267	I
4	Monitoring the functioning of farmers' group on a regular basis	2.169	VI
5	Helps in federation of farmers' group from block to district level	3.044	III
6	Helps in establishing information portals for information sharing	2.821	V

Table 4.2.7. Performance of different role items by the respondents under reporting dimension
N=112

Role No	Role items	Weighted Mean score	Rank
1	Documentation and publication of success stories of farmers	2.589	VI
2	Reporting farmers' feed back in block meeting	3.089	II
3	Keeping inventory of all the beneficiary farmers and farm related activities	2.955	III
4	Supporting ATMA management committee in discharging its function	3.169	I

5	Compiling report on reviewing of progress and reporting the same to ATMA Management Committee	2.928	IV
6	Submission of work plans to State Level sanctioning Committee	2.803	V

Table 4.2.8. Performance of different role items by the respondents under budgeting dimension **N=112**

Role. No	Role items	Weighted mean score	Rank
1	Working on the credit appraisal and getting approval for the activities to be carried out	2.705	IV
2	Maintaining proper record and account for the activities carried out	3.205	I
3	Provisioning rewards and incentives for successful famer(s)/ groups	2.955	III
4	Provisioning seed money/revolving fund for functioning of farmers' group	2.669	V
5	Compiling report on utilization of fund and the physical progress of work	2.964	II
6	Mobilizing fund needed for documentation and publication of success stories	2.508	VI

Table 4.3.1. Relationship between the independent variables and the level of role performance under planning dimension **N=112**

S N	Independent variables	'r' value	't' value
1	Age	0.171	1.875
2	Educational qualification	0.116	1.228
3	Service experience	0.331**	3.681
4	Training exposure	0.323**	3.584
5	Decision making ability	0.174	1.895
6	Role awareness	0.576**	7.398

7	Role perception	0.535**	6.643
8	Job involvement	0.173	1.869
9	Role conflict	-0.473**	-5.627
10	Role ambiguity	0.139	1.473
11	Attitude towards ATMA	0.615**	8.175
12	Achievement motivation	0.619**	8.266
13	Motivational climate	0.568**	7.239
14	Job satisfaction	0.511**	6.240
15	Job anxiety	-0.504**	-6.116

**Significant at 0.01 level probability

Table 4.3.2. Relationship between the independent variables and the level of role performance under organizing dimension N=112

S N	Independent variables	'r' value	't' value
1	Age	0.129	1.360
2	Educational qualification	-0.008	-0.083
3	Service experience	0.264**	2.872
4	Training exposure	0.241**	2.607
5	Decision making ability	0.156	1.659
6	Role awareness	0.484**	5.801
7	Role perception	0.507**	6.169
8	Job involvement	0.134	1.374
9	Role conflict	-0.420**	-4.849
10	Role ambiguity	0.139	1.466
11	Attitude towards ATMA	0.478**	5.702
12	Achievement motivation	0.562**	7.127
13	Motivational climate	0.469**	5.563
14	Job satisfaction	0.410**	4.707
15	Job anxiety	-0.488**	-5.864

**Significant at 0.01 level probability

Table 4.3.3. Relationship between the independent variables and the level of role performance under staffing dimension N=112

S N	Independent variables	'r' value	't' value
1	Age	0.173	1.924

2	Educational qualification	0.042	0.438
3	Service experience	0.361**	4.057
4	Training exposure	0.292**	3.206
5	Decision making ability	0.136	1.436
6	Role awareness	0.429**	4.976
7	Role perception	0.488**	5.868
8	Job involvement	0.084	0.880
9	Role conflict	-0.470**	-5.581
10	Role ambiguity	0.124	1.306
11	Attitude towards ATMA	0.527**	6.501
12	Achievement motivation	0.596**	7.774
13	Motivational climate	0.460**	5.429
14	Job satisfaction	0.477**	5.697
15	Job anxiety	-0.404**	-4.631

**Significant at 0.01 level probability

Table 4.3.4. Relationship between the independent variables and the level of role performance under directing dimension N=112

S N	Independent variables	'r' value	't' value
1	Age	0.167	1.865
2	Educational qualification	0.066	0.690
3	Service experience	0.378**	4.275
4	Training exposure	0.269**	2.931
5	Decision making ability	0.179	1.904
6	Role awareness	0.491**	5.914
7	Role perception	0.490**	5.892
8	Job involvement	0.121	1.280
9	Role conflict	-0.407**	-4.675
10	Role ambiguity	0.142	1.509
11	Attitude towards ATMA	0.559**	7.077
12	Achievement motivation	0.612**	8.119
13	Motivational climate	0.507**	6.164
14	Job satisfaction	0.459**	5.414
15	Job anxiety	-0.466**	-5.523

**Significant at 0.01 level probability

Table 4.3.5. Relationship between the independent variables and the level of role performance under coordinating dimension **N=112**

S N	Independent variables	'r' value	't' value
1	Age	0.179	1.923
2	Educational qualification	0.055	0.573
3	Service experience	0.321**	3.558
4	Training exposure	0.352**	3.946
5	Decision making ability	0.138	1.456
6	Role awareness	0.517**	6.338
7	Role perception	0.509**	6.196
8	Job involvement	0.176	1.870
9	Role conflict	-0.381**	-4.319
10	Role ambiguity	0.108	1.140
11	Attitude towards ATMA	0.530**	6.550
12	Achievement motivation	0.610**	8.067
13	Motivational climate	0.497**	6.004
14	Job satisfaction	0.481**	5.755
15	Job anxiety	-0.476**	-5.681

**Significant at 0.01 level probability

Table 4.3.6. Relationship between the independent variables and the level of role performance under reporting dimension **N=112**

S N	Independent variables	'r' value	't' value
1	Age	0.173	1.891
2	Educational qualification	0.080	0.845
3	Service experience	0.362**	4.078
4	Training exposure	0.337**	3.748
5	Decision making ability	0.082	0.865
6	Role awareness	0.608**	8.024
7	Role perception	0.573**	7.326
8	Job involvement	0.140	1.482
9	Role conflict	-0.490**	-5.889
10	Role ambiguity	0.075	0.791
11	Attitude towards ATMA	0.573**	7.324
12	Achievement motivation	0.594**	7.740
13	Motivational climate	0.522**	6.418
14	Job satisfaction	0.391**	4.456
15	Job anxiety	-0.500**	-6.054

**Significant at 0.01 level probability

Table 4.3.7. Relationship between the independent variables and the level of role performance under budgeting dimension **N=112**

S N	Independent variables	'r' value	't' value
1	Age	0.168	1.792
2	Educational qualification	0.080	0.836
3	Service experience	0.293**	3.212
4	Training exposure	0.325**	3.609
5	Decision making ability	0.139	1.475
6	Role awareness	0.538**	6.696
7	Role perception	0.512**	6.252
8	Job involvement	0.143	1.533
9	Role conflict	-0.521**	-6.397
10	Role ambiguity	0.094	0.985
11	Attitude towards ATMA	0.512**	6.258
12	Achievement motivation	0.549**	6.896
13	Motivational climate	0.455**	5.365
14	Job satisfaction	0.429**	4.985
15	Job anxiety	-0.483**	-5.782

**Significant at 0.01 level probability

Table 4.3.8. Relationship between the independent variables and level of overall role performance **N=112**

Sl No	Independent variables	'r' value	't' value
1	Age	0.176	1.916
2	Educational qualification	0.068	0.710
3	Service experience	0.364**	4.102
4	Training exposure	0.337**	3.755
5	Decision making ability	0.161	1.712
6	Role awareness	0.656**	9.110
7	Role perception	0.593**	7.715
8	Job involvement	0.178	1.902
9	Role conflict	-0.498**	-6.023
10	Role ambiguity	0.129	1.367
11	Attitude towards ATMA	0.597**	7.812
12	Achievement motivation	0.653**	9.033

13	Motivational climate	0.548**	6.861
14	Job satisfaction	0.498**	6.015
15	Job anxiety	-0.523**	-6.438

**Significant at 0.01 level probability

Table 4.4.1. Contributory effects of selected independent variables on the planning role performance

N=112

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.171**	2.878	0.801	0.781	40.668
2	Training exposure	0.051*	2.298			
3	Role awareness	0.613**	2.595			
4	Role perception	0.377**	3.560			
5	Role conflict	-0.011	-0.303			
6	Attitude towards ATMA	0.115**	4.918			
7	Achievement motivation	0.038*	1.729			
8	Motivational climate	0.027**	3.646			
9	Job satisfaction	0.090**	4.630			
10	Job anxiety	-0.272**	-3.134			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.2. Contributory effects of selected independent variables on the organizing role performance
N=112

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.102	1.223	0.634	0.598	17.498
2	Training exposure	0.039	1.242			
3	Role awareness	1.049**	2.757			
4	Role perception	0.478**	3.425			
5	Role conflict	-0.025	-0.472			
6	Attitude towards ATMA	0.067*	2.068			
7	Achievement motivation	0.039	1.239			
8	Motivational climate	0.020*	1.932			
9	Job satisfaction	0.079**	2.869			
10	Job anxiety	-0.355**	-2.893			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.3. Contributory effects of selected independent variables on the staffing role performance
N=112

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.231**	2.805	0.663	0.629	19.839
2	Training exposure	0.066*	2.174			
3	Role awareness	0.526	1.530			
4	Role perception	0.397**	3.012			
5	Role conflict	-0.045	-0.857			
6	Attitude towards ATMA	0.089**	2.802			
7	Achievement motivation	0.065*	2.168			
8	Motivational climate	0.017*	1.686			
9	Job satisfaction	0.091**	3.416			
10	Job anxiety	-0.148	-1.256			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.4. Contributory effects of selected independent variables on the directing role performance N=112

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.250**	3.175	0.701	0.672	23.737
2	Training exposure	0.042	1.440			
3	Role awareness	0.647*	1.957			
4	Role perception	0.384**	2.889			
5	Role conflict	-0.034	-0.688			
6	Attitude towards ATMA	0.116**	3.814			
7	Achievement motivation	0.063*	2.156			
8	Motivational climate	0.023*	2.309			
9	Job satisfaction	0.089**	3.442			
10	Job anxiety	-0.293**	-2.558			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.5. Contributory effects of selected independent variables on the coordinating role performance N=112

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.164*	2.206	0.709	0.680	24.596
2	Training exposure	0.083**	2.894			
3	Role awareness	0.917**	2.469			
4	Role perception	0.272*	2.209			
5	Role conflict	-0.025	-0.535			
6	Attitude towards ATMA	0.075**	2.552			
7	Achievement motivation	0.084**	3.156			
8	Motivational climate	0.019*	2.016			
9	Job satisfaction	0.098**	3.969			
10	Job anxiety	-0.287**	-2.582			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.6. Contributory effects of selected independent variables on the reporting role performance **N=112**

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.168**	2.443	0.746	0.721	29.686
2	Training exposure	0.078**	3.008			
3	Role awareness	1.241**	4.032			
4	Role perception	0.323**	2.700			
5	Role conflict	-0.050	-1.141			
6	Attitude towards ATMA	0.089**	3.267			
7	Achievement motivation	0.046*	1.819			
8	Motivational climate	0.021**	2.349			
9	Job satisfaction	0.036	1.592			
10	Job anxiety	-0.278**	-2.722			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.7. Contributory effects of selected independent variables on the budgeting role performance **N=112**

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	0.104	1.296	0.672	0.639	20.687
2	Training exposure	0.089**	2.907			
3	Role awareness	1.163**	3.389			
4	Role perception	0.207	1.536			
5	Role conflict	-0.116*	-2.232			
6	Attitude towards ATMA	0.067*	2.101			
7	Achievement motivation	0.061*	2.106			
8	Motivational climate	0.017*	1.652			
9	Job satisfaction	0.057*	2.129			
10	Job anxiety	-0.263*	-2.147			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.4.8. Contributory effects of selected independent variables on the overall role performance **N=112**

S N	Variables	b value	t value	R ²	Adjusted R ²	F value
1	Service experience	1.125**	3.038	0.825	0.807	47.555
2	Training exposure	0.442**	3.179			
3	Role awareness	1.083**	3.411			
4	Role perception	0.332**	3.127			
5	Role conflict	-0.184	-0.782			
6	Attitude towards ATMA	0.616**	4.289			
7	Achievement motivation	0.382**	2.792			
8	Motivational climate	0.141**	3.014			
9	Job satisfaction	0.519**	4.269			
10	Job anxiety	-1.839**	-3.363			

*Significant at 0.05 level probability

**Significant at 0.01 level probability

Table 4.5.1. Direct and indirect effects of selected independent variables on the planning role performance **N=112**

Sl.No.	Independent variables	Direct effect	Variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X_1)	0.403	0.184(X_3) 0.058(X_4) 0.026(X_5) 0.006 (X_6)	0.274	0.677
2	Role awareness (X_3)	2.518	0.799(X_4) 0.354(X_5) 0.078(X_6)	1.231	3.749
3	Role perception (X_4)	1.058	0.206(X_5) 0.046(X_6)	0.252	1.310
4	Role conflict (X_5)	0.335	0.074(X_6)	0.074	0.409
5	Achievement motivation (X_7)	0.233	0.072 (X_6)	0.072	0.305
6	Motivational climate (X_8)	0.082	0.023 (X_{10}) 0.004 (X_5) 0.010(X_9) 0.034 (X_7) 0.002(X_6)	0.073	0.155
7	Job satisfaction (X_9)	0.204	0.035(X_6) 0.063(X_7)	0.098	0.302
8	Job anxiety(X_{10})	0.875	0.151(X_5) 0.033(X_6)	0.184	1.059
9	Attitude towards ATMA(X_6)	0.268	-		0.268

Table 4.5.2. Direct and indirect effects of selected independent variables on the organizing role performance
N=112

S. N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X_1)	0.335	0.127(X_3) 0.043(X_4) 0.006(X_5) 0.001(X_6)	0.177	0.512
2	Role awareness (X_3)	2.652	0.896(X_4) 0.135(X_5) 0.025(X_6)	1.056	3.708
3	Role perception (X_4)	1.007	0.152(X_5) 0.028(X_6)	0.180	1.187
4	Role conflict (X_5)	0.309	0.058(X_6)	0.058	0.367
5	Achievement motivation (X_7)	0.220	0.057(X_6)	0.057	0.277
6	Motivational climate (X_8)	0.069	0.023(X_{10}) 0.004(X_5) 0.008(X_9) 0.032(X_7) 0.001(X_6)	0.068	0.137
7	Job satisfaction (X_9)	0.170	0.028(X_6) 0.059(X_7)	0.087	0.257
8	Job anxiety(X_{10})	0.883	0.169(X_5)	0.201	1.084

			0.032(X ₆)	
9	Attitude towards ATMA(X ₆)	0.217	-	0.217

Table 4.5.3. Direct and indirect effects of selected independent variables on the staffing role performance **N=112**

S N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.461	0.173(X ₃) 0.050(X ₄) 0.052(X ₅) 0.009(X ₆)	0.284	0.745
2	Role awareness (X ₃)	2.219	0.660(X ₄) 0.663(X ₅) 0.113(X ₆)	1.436	3.655
3	Role perception (X ₄)	0.959	0.180(X ₅) 0.031(X ₆)	0.211	1.170
4	Role conflict (X ₅)	0.349	0.059(X ₆)	0.059	0.408
5	Achievement motivation (X ₇)	0.235	0.058(X ₆)	0.058	0.293
6	Motivational climate (X ₈)	0.069	0.019(X ₁₀) 0.004(X ₅) 0.010(X ₉) 0.034 (X ₇) 0.002(X ₆)	0.069	0.138

7	Job satisfaction (X ₉)	0.199	0.031(X ₆) 0.063(X ₇)	0.094	0.293
8	Job anxiety(X ₁₀)	0.737	0.155(X ₅) 0.026(X ₆)	0.181	0.918
9	Attitude towards ATMA(X ₆)	0.241	-		0.241

Table 4.5.4. Direct and indirect effects of selected independent variables on the directing role performance
N=112

S N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.498	0.201(X ₃) 0.060(X ₄) 0.040(X ₅) 0.009(X ₆)	0.310	0.808
2	Role awareness (X ₃)	2.517	0.748(X ₄) 0.495(X ₅) 0.109(X ₆)	1.352	3.869
3	Role perception (X ₄)	1.030	0.150(X ₅) 0.033(X ₆)	0.183	1.213
4	Role conflict (X ₅)	0.312	0.069(X ₆)	0.069	0.381
5	Achievement motivation (X ₇)	0.249	0.068(X ₆)	0.068	0.317
6	Motivational climate (X ₈)	0.078	0.023(X ₁₀) 0.004(X ₅) 0.010(X ₉)	0.075	0.153

			0.036(X ₇)		
			0.002(X ₆)		
7	Job satisfaction (X ₉)	0.198	0.034(X ₆)	0.101	0.299
			0.067(X ₇)		
8	Job anxiety(X ₁₀)	0.876	0.151(X ₅)	0.184	1.06
			0.033(X ₆)		
9	Attitude towards ATMA(X ₆)	0.264	-		0.264

Table 4.5.5. Direct and indirect effects of selected independent variables on the coordinating role performance **N=112**

S. N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.410	0.144(X ₃) 0.022(X ₅) 0.005(X ₆)	0.171	0.581
2	Role awareness (X ₃)	2.991	0.460(X ₅) 0.100(X ₆)	0.560	3.551
4	Role conflict (X ₅)	0.283	0.062(X ₆)	0.062	0.345
5	Achievement motivation (X ₇)	0.241	0.061(X ₆)	0.061	0.302
6	Motivational climate (X ₈)	0.074	0.023(X ₁₀) 0.004(X ₅) 0.010(X ₉) 0.035(X ₇) 0.002(X ₆)	0.074	0.148
7	Job satisfaction (X ₉)	0.201	0.031(X ₆) 0.065(X ₇)	0.096	0.297
8	Job anxiety(X ₁₀)	0.868	0.148(X ₅) 0.032(X ₆)	0.180	1.048
9	Attitude towards ATMA(X ₆)	0.242			0.242

Table 4.5.6. Direct and indirect effects of selected independent variables on the reporting role performance **N=112**

S N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.457	0.222(X ₃) 0.065(X ₄) 0.043(X ₅) 0.007(X ₆)	0.337	0.794
2	Role awareness (X ₃)	3.082	0.909(X ₄) 0.594(X ₅) 0.103(X ₆)	1.606	4.688
3	Role perception (X ₄)	1.127	0.195(X ₅) 0.034(X ₆)	0.229	1.356
4	Role conflict (X ₅)	0.359	0.063(X ₆)	0.063	0.422
5	Achievement motivation (X ₇)	0.231	0.063(X ₆)	0.063	0.294
6	Motivational climate (X ₈)	0.077	0.023(X ₁₀) 0.004(X ₅) 0.008(X ₉) 0.033(X ₇) 0.002(X ₆)	0.070	0.147

7	Job satisfaction (X ₉)	0.161	0.033(X ₆) 0.062(X ₇)	0.095	0.256
8	Job anxiety(X ₁₀)	0.899	0.139(X ₅) 0.024(X ₆)	0.163	1.062
9	Attitude towards ATMA(X ₆)	0.258			0.258

Table 4.5.7. Direct and indirect effects of selected independent variables on the budgeting role performance
N=112

S. N	Independent variables	Direct effect	variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.383	0.013(X ₃) 0.054(X ₄) 0.033(X ₅) 0.005(X ₆)	0.105	0.488
2	Role awareness (X ₃)	2.706	1.070(X ₄) 0.653(X ₅) 0.097(X ₆)	1.820	4.526
3	Role perception (X ₄)	0.992	0.118(X ₅) 0.017(X ₆)	0.135	1.127
4	Role conflict (X ₅)	0.396	0.059(X ₆)	0.059	0.455
5	Achievement motivation (X ₇)	0.222	0.058(X ₆)	0.058	0.280
6	Motivational climate (X ₈)	0.069	0.023(X ₁₀) 0.004(X ₅) 0.009(X ₉) 0.032(X ₇)	0.070	0.139

			0.002(X ₆)		
7	Job satisfaction (X ₉)	0.184	0.030(X ₆)	0.090	0.274
			0.060(X ₇)		
8	Job anxiety(X ₁₀)	0.901	0.171(X ₅)	0.196	1.097
			0.025(X ₆)		
9	Attitude towards ATMA(X ₆)	0.239	-		0.239

Table 4.5.8. Direct and indirect effects of selected independent variables on the overall role performance
N=112

S N	Independent variables	Direct effect	Variables through which indirect effects are channelized	Total Indirect effect	Total effect
1	Service experience (X ₁)	0.403	0.184(X ₃) 0.058(X ₄) 0.026(X ₅) 0.006 (X ₆)	0.274	0.677
2	Role awareness (X ₃)	2.518	0.799(X ₄) 0.354(X ₅) 0.078(X ₆)	1.231	3.749
3	Role perception (X ₄)	1.058	0.206(X ₅) 0.046(X ₆)	0.252	1.310
4	Role conflict (X ₅)	0.335	0.074(X ₆)	0.074	0.409
5	Achievement motivation (X ₇)	0.233	0.072 (X ₆)	0.072	0.305
6	Motivational climate (X ₈)	0.082	0.023 (X ₁₀)	0.073	0.155

			0.004 (X ₅)		
			0.010(X ₉)		
			0.034 (X ₇)		
			0.002(X ₆)		
7	Job satisfaction (X ₉)	0.204	0.035(X ₆)	0.098	0.302
			0.063(X ₇)		
8	Job anxiety(X ₁₀)	0.875	0.151(X ₅)	0.184	1.059
			0.033(X ₆)		
9	Attitude towards ATMA(X ₆)	0.268	-		0.268

APPENDIX-I

RESEARCH SCHEDULE

Department of Extension education
Faculty of Agriculture, A.A.U
Jorhat-785013, Assam

Title of the Research: A study on the Role Performance of the Agricultural Extension Personnel in the revitalized Extension System in the state of Assam

Major Advisor : Dr. P. K. Das
Professor, Dept of Extension Education
B.N.C.A, A.A.U, Jorhat

Investigator: Mr. Dharindra Bortamuly
PhD Student, AAU, Jorhat
Mobile No-8876734116

Background information (please tick '✓' wherever is applicable)

1. Name in full : _____
2. Name of the district :
3. Name of the block :
4. Gender : Male/ female
5. Date of Birth : __/ __/ __ (D/M/Y)
6. Present age : ____ (in yrs)

7. Academic qualification : B.Sc/ M.Sc/ Ph D
8. Total service experience : (in yrs)
9. Date of joining in the job : __/ __/ __ (D/M/Y)
10. Numbers of training attended

[illegible]

11. Decision making ability

Given Below are some statements with 5(five) response categories against each statement. Please tick '✓' the appropriate response category against each statement expressing your agreement/ disagreement with the statement

S. N	Statements	VI	I	SI	LI	NI
1	Decision making in democratic set up is done in consultation with the concerned people					
2	Collective decision making ensures harmony and healthy relation among the people					
3	Needs and interests of the people are the foundations of the decision making process					
4	Ideas and experience of the specialists help in taking appropriate decisions					
5	Decision making in public affairs is a careful activity to touch the sentiments and feelings of majority of the people					
6	In democracy, co-operative decision making is preferred over individual decision making					
7	Role performance is governed by the quality of decision making					
8	Mass participation in activities takes place as a result of good decision making					

VI= Very Important, I= Important, SI= Somewhat important, LI= Less Important, NI= Not Important.

12. Job involvement

Given Below are some statements with 5(five) response categories against each statement. Please tick '✓' the appropriate response category against each statement expressing your agreement/ disagreement with the statement.

S. N	Statements	SA	A	UD	DA	SDA
1.	Quite often I feel like staying at home instead of going to work					
2	I avoid taking on extra duties and responsibilities in my work					
3	I am very much involved personally in my work					
4	Sometimes I lay awake at night thinking ahead to the next day's work					
5	The major satisfaction in my life comes from my job					
6	I feel depressed when I fail at something connected with job					
7	I am really a perfectionist about my work.					
8	To me, my work is only a small part of my life					
9	I have other activities more important than my work					
10	I usually go for work a little early to get things ready					
11	I will stay overtime to finish a job even if I am not paid for it					
12	I feel restless if something remains incomplete in the office					
13	I feel irritated in doing the job					
14	For me, morning at work really go off quickly					

SA=Strongly Agree, A=Agree, UD= Undecided, DA= Disagree, SDA= Strongly disagree

13. Role conflict and role ambiguity

Given Below are some statements with 5(five) response categories against each statement. Please tick '✓' the appropriate response category against each statement expressing your agreement/ disagreement with the statement

S. N.	Statements	SA	A	UD	DA	SDA
1	I have enough time to complete my work					
2	I have to do things that should be done differently					
3	I am able to act the same regardless of the group I am with					
4	I work under incompatible policies and guidelines					
5	I receive work without manpower to complete them					
6	I have to overlook a rule or policies in order to complete a work sooner					
7	I have just the right amount of work to do					
8	I receive incompatible request from two or more person					
9	I do things that are apt to be accepted by one person and not accepted by others					
10	I receive work without adequate resource and materials to execute them					
11	I work on unnecessary things					
12	I feel certain about how much authority I have					
13	I have clear planned goals and objective for my job					
14	I have a lack of guidelines to help me					
15	I know that I have divided my time properly					
16	I know what my responsibilities are					
17	I have to 'feel my way' in preparing my duties					
18	I know what is expected of me					
19	I am told how well I am doing my job					
20	I receive a clear explanation of what has to be done					
21	I have to work under vague, direction or order					
22	I do not know if my work will be accepted to my supervisors					

SA- strongly Agree, A-Agree, UD- Undecided, DA-Disagree, SDA- Strongly Disagree

14. Attitude towards ATMA

Below given are few statements with 5 (five) response categories against each statement. You are requested to tick the appropriate response category against each statement expressing your agreement/ disagreement. (SA-Strongly Agree, A-Agree, UD-Undecided, DA- Dis agree, SDA- Strongly Disagree).

S.N	Statements	SA	A	UD	DA	SDA
1	ATMA has increased the employment opportunities in rural area					
2	ATMA cannot meet the location specific needs of the farmers					
3	Farmers feedback is fast through ATMA than earlier					
4	ATMA is not helpful in converging line departments					
5	ATMA is empowering farmers through group formation					
6	Extension work became more challenging due to ATMA					
7	ATMA has raised my performance in professional life					
8	Working under ATMA is not rewarding					
9	ATMA helps in up scaling and replication of technologies					
10	ATMA develops self reliance among farmers					
11	ATMA guidelines are too complicated to follow					
12	Information exchange and sharing increases due to ATMA					
13	Only the resourceful farmers can get the benefit of ATMA					
14	ATMA assist in participatory planning and decision making					
15	I am not satisfied working under ATMA					
16	ATMA is helpful in up scaling of my career					
17	ATMA has succeeded in rooting out poverty					
18	ATMA is not changing the mindset of farmers					
19	Money spent under ATMA is mere wastage					
20	The future of extension lies in ATMA					

15. Achievement motivation

Given Below are some statements with 5(five) response categories against each statement. Please tick '✓' the appropriate response category against each statement expressing your agreement/ disagreement with the statement. (SA-Strongly Agree, A-Agree, UD-Undecided, DA- Dis agree, SDA- Strongly Disagree).

S.N	Statements	SA	A	UD	DA	SDA
1	I am the happiest when I am successful in my work/ studies					
2	I hate to think of unsuccessful mission in my life					
3	I will be very happy if I can do something of great significance					
4	I like to do something which other can hardly do					
5	It's my nature to accept a job/task which is difficult but can be achieved					
6	I always calculate the pros and cons before doing/ selecting any new career					
7	In whatever work I take, I like to assume full responsibilities					
8	I have the habit to answer for the success or failure of a task I undertake					
9	I have a tendency to analyse other's judgement on my performance					
10	I hate to leave a task unfinished					
11	I do not feel upset when fail on some task					
12	I like to take risks within my abilities and capacities					
13	I am always anxious to know my defects so as to overcome them					
14	I try to do my best in whatever work I undertake					
15	I would like to repeat the same achievements as today after 5 years					
16	I am often tempted to undertake a task I will be able to do even if it is a difficult one					
17	It is nature to accept tasks which require more complex skills					
18	I believe that if I can do something, it's I who is liable for the results					
19	I wish to be told how I am performing					
20	In my opinion, one shouldn't get nervous on failure, but should try again					

16. Job satisfaction

Given below are some statements with 5(five) response categories against each statements. Please tick (‘✓’) in the appropriate response category against each statement expressing your satisfaction/ dissatisfaction with the statement.

S. N	Job dimension	VMS	S	LS	DS	VMDS
A	Satisfaction with personal development					
1	Opportunity for independent thought					
2	Feeling of self improvement					
3	Feeling of accomplishment					
4	Opportunity for professional growth					
B	Satisfaction with socio professional interaction					
5	Opportunity for participation					
6	Opportunity to help others					
7	Opportunity for close friendship					
8	Opportunity to get know others					
C	Satisfaction with work itself					
9	Variety on the job					
10	Chance to do a whole piece of work					
11	Opportunity to do many things					
12	Opportunity to do challenging jobs					
13	Opportunity to complete work					
14	Freedom on the job					
D	Satisfaction with salary and job security					
15	Opportunity for promotion					
16	Feeling of security					
17	Pay for the job					
E	Satisfaction with social status					
18	Self esteem or respect for your colleagues					
19	Prestige of job inside the department					
20	Prestige of job outside the department					
F	Satisfaction with superiors					
21	Amount of close supervision					
22	Opportunity for feedback on performance					

(VMS= Very Much Satisfied, S=Satisfied, LS= Least Satisfied, DS= Dissatisfied, VMDS= Very Much Dissatisfied)

17. Job Anxiety

Given Below are some statements with 2(two) response categories against each statement. Please tick '✓' the appropriate response category against each statement expressing your agreement/ disagreement with the statement

S N	Statements	Yes	No
A	Job security		
1	I think my service is more secure than others		
2	My salary is sufficient to lead a comfortable life		
B	Recognition and fair evaluation		
3	Good work is always recognized here		
4	Screening for promotion is horrible in this organization		
C	Human relation at work		
5	Employees are very friendly here		
6	I do not get cooperation when I need it		
D	Rewards and punishment		
7	I am often worried that I may be given some punishment		
8	I feel that the employees are paid less in comparison to their abilities and efforts		
E	Self esteem and status of the job		
9	I often feel that I have not selected a suitable job		
10	I hesitate in meeting my friends due to low status of my job		
F	Future prospects		
11	I can achieve the goal of my life through this job		
12	I often worried that I would not be able to progress		
G	Capacity and confidence to shoulder job responsibilities		
13	I get nervous in performing any work which is date bound		
14	My job is not benefiting to my capabilities		
15	I am not fully qualified to handle my job		
16	I feel that my work is interesting and simple		

18. Motivational climate

Below given are few statements in each of the ten (10) dimensions of motivational climate (A to J). The six statements in each dimensions expressed six types of motivation. You are requested to rank the six statements in order of their dominance prevailing in your organization at present. Rank I should be given to the statement which closely describes the situation and Rank VI should be given to the statement which describes the situation least.

S.N.	Statements	Rank
A	Orientation	
1	Extension agents here are mainly concerned about the following laid down rules and procedures	
2	The main concern of extension agents here is to help each other to develop greater skills and so, advance in the organization	
3	Achieving goals or targets set, or excelling them, seems to be the main concern	
4	Consolidating one's own personal position and influence seems to be the main concern	
5	The dominant concern here is to maintain friendly relations with others	
6	The main concern of the extension agents here is to develop their competence and expertise	
B	Interpersonal relationship	
1	In this organization most informal groups are formed around experts	
2	The atmosphere here is very friendly and extension agents spend enough time in informal social relations	
3	There are strong cliques in the organization to protect their interests	
4	Business like relationship prevails here-extension agents are warm, but get together mostly for ensuring excellence in performance	
5	Extension agents have strong associations mostly with their supervisors and look for suggestions and guidance from them	
6	Extension agents have high concern for one another and help each other spontaneously when such help needed.	
C	Supervision	
1	Supervision here is usually to check mistakes and 'catch' the person	
2	Superiors here strongly prefer that their subordinates ask them for	

S.N.	Statements	Rank
	instructions and suggestions	
3	Superiors here take pains to see that their subordinates improve personal skills and chances of advancement	
4	Superiors reward outstanding achievement	
5	Superiors try to use their expertise and competence rather than their formal authority in influencing their subordinates	
6	Superiors here are most concerned with maintaining good relations with their subordinates than stressing duties and performance	
D	Managing problems	
1	Extension agents here take problems as challenges and try to find out better solutions than anybody else	
2	Extension agents are consulted, and they play an important role in solving problems	
3	Extension agents mostly consult their friends while dealing with problems.	
4	Problems are solved keeping in mind the needs and benefit of the extension agents in the organization and the society at large	
5	Extension agents usually refer the problems to and look for solutions from their seniors	
6	Usually problems are solved by supervisors without involving their subordinates	
E	Managing mistakes	
1	The person making a mistake is not rejected- he is shown much warmth by his friends	
2	Here the philosophy is that the supervisor can commit no mistake and the subordinate dare not make one	
3	Usually extension agents are able to acknowledge and analyse their mistakes because they can expect to receive help and support from others	
4	A mistake by a subordinate is treated as an experience from which lessons are learnt to prevent failure and improve performance in the future	
5	Subordinates expect guidance from their controlling officer to correct or prevent making mistakes	
6	Help of experts is sought in analysing and preventing mistakes	

S.N.	Statements	Rank
F	Managing conflicts	
1	Most interpersonal and interdepartmental conflicts arise out of striving for higher performance and these are analysed and resolved with the overriding consideration being high productivity	
2	Conflicts are usually avoided or smoothed over to retain the friendly atmosphere	
3	Arbitration or third party intervention(usually by experienced persons or seniors) is sought and used	
4	In a conflict situation those who are stronger force their point of view	
5	In resolving conflicts an appeal is made to principles and organizational ideals and the larger good of the organization	
6	Relevant experts are consulted and used in resolving conflicts	
G	Communication	
1	Instructions are issued after due consideration by the authorities and are expected to be carried out	
2	Most communication is informal and friendly and arises from as well as contributes to warm relations at work	
3	Extension agents ask for information from those who are experts on the subject	
4	Relevant information is made available to all who need and can use such information for achieving higher performance	
5	Extension agents communicate information, suggestions and even criticisms to others out of the concern for them	
6	Communication is often selective-extension agents usually give or hold back crucial information as a way of control	
H	Decision making	
1	While taking decisions, extension agents make special attempts to maintain cordial relations with all concerned	
2	Decisions are made at the top and communicated downward, and extension agents here generally prefer this	
3	Extension agents who have demonstrated high achievement have a great say in the decisions made here	
4	Decisions here are generally made without involving subordinates or colleagues	

S.N.	Statements	Rank
5	Decisions are made and influenced by specialist and knowledgeable persons	
6	Decisions are made by keeping in view the good of the extension agents and of society.	
I	Trust	
1	Only a few persons are treated well by the authority and they are quite influential	
2	Trusting and friendly relations are highly valued here	
3	High value is put here on both the superior and his subordinate trusting each other like father and son	
4	The extension agents and experts are highly trusted here	
5	Here a general helping attitude generates mutual trust	
6	Those who can achieve results are highly trusted	
J	Managing reward	
1	Mainly excellence in performance and getting task accomplished is recorded	
2	Knowledge and expertise are recognized and recorded here	
3	Loyalty is recorded more than anything else	
4	The organization rewards those who help their colleagues to develop and those who contribute to team work	
5	The ability to control subordinates and maintain discipline is given the highest weighting in rewarding extension agents and supervisors	
6	The ability to get along well with others is highly rated and rewarded	

19. Role awareness and Role perception

Below given are some role items delineating the job responsibilities in your position? Two continuums have been given each of which containing five categories. You are requested to tick '✓' the most appropriate category against each statement according to the extent of your perception. (A=Aware, NA=Not Aware, MI= Most Important, I=Important, SI= Somewhat Important, NI= Not Important)

S N	Role items	Do you		Level of perception			
		A	NA	MI	I	SI	NI
A	Planning						
1	Helping district core team in up gradation of SREP						
2	Preparation of Block Action Plan (BAP)						
3	Carrying out socio-economic analysis for group formation						
4	Identification and prioritization of needs and interest of the farmers						
5	Developing module for capacity building programmes						
6	Exploring new area of farming having present and future prospects						
B	Organizing						
1	Operationalising SREP in each block						
2	Facilitating farmers' organization at block level						
3	Organizing capacity building programmes for farmers and farmers' group						
4	Organizing farmer's meeting in setting aims and objectives						
5	Organizing exhibition, kisan mela, fruits/ vegetable show						
6	Establishing linkages for convergence with line department						
C	Staffing						
1	Selection of beneficiaries in consultation with farmers advisory committee and village panchayats						
2	Helping farmer's group in selection of its members						
3	Identification and development of leader for farmers group						
4	Identification of farmers and farmers' group for						

S N	Role items	Do you		Level of perception			
		A	NA	MI	I	SI	NI
	rewards and incentives						
5	Helps in formation of Farm Information and Advisory Centre						
6	Identification of resource persons for capacity building programmes						
D	Directing						
1	Intimating farmers and resource persons for the capacity building programmes						
2	Facilitating farmer to farmer technology dissemination and learning						
3	Helping farmers in getting necessary inputs from the service centre						
4	Helping farmers groups in maintaining sustainability and leadership						
5	Detailing the activities to be carried out by Farmers advisory committee						
6	Providing timely and relevant information to farmers						
E	Coordinating						
1	Coordinating the implementation of extension programmes detailed in BAP						
2	Coordinating block meeting to discuss the issues brought by farmer's advisory committee						
3	Coordinating assessment, refinement, validation and adoption of front line technologies with local research centres						
4	Monitoring the functioning of farmers' group on a regular basis						
5	Helps in federation of farmers' group from block to district level						
6	Helps in establishing information portals for information sharing						

S N	Role items	Do you		Level of perception			
		A	NA	MI	I	SI	NI
F	Reporting						
1	Documentation and publication of success stories of farmers						
2	Reporting farmers' feed back in block meeting						
3	Keeping inventory of all the beneficiary farmers and farm related activities						
4	Supporting ATMA management committee in discharging its function						
5	Compiling report on reviewing of progress and reporting the same to ATMA Management Committee						
6	Submission of work plans to State Level sanctioning Committee						
G	Budgeting						
1	Working on the credit appraisal and approval for the activities to be carried out						
2	Maintaining proper record and account for the activities carried out						
3	Provisioning rewards and incentives for successful famers/ groups						
4	Provisioning seed money/revolving fund for functioning of farmer(s) / groups						
5	Compiling report on utilization of fund and the physical progress of work						
6	Mobilizing fund needed for documentation and publication of success stories						

20. Role Performance

Below given are some role items delineating the job responsibilities in your position? Two continuums have been given each of which containing five categories. You are requested to tick ‘✓’ the most appropriate category against each statement according to the extent of your performance. (Y=Yes, N=No, R=Regularly, S=Seldom, N=Never, VW= Very Well, W= Well, SH= Somehow, P=Poor)

[illegible]

[illegible]

[illegible]

Appendix II

‘t’ value of the final items of the performance index to measure the level of role performance by the extension personnel

S N	Role items	‘t’ value
A	Planning	
1	Helping district core team in up gradation of SREP	2.16
2	Preparation of Block Action Plan (BAP)	3.07
3	Carrying out socio-economic analysis for group formation	3.45
4	Identification and prioritization of needs and interest of the farmers	3.43
5	Developing module for capacity building programmes	1.89
6	Exploring new area of farming having present and future prospects	2.34
B	Organizing	
1	Operationalising SREP in each block	2.12
2	Facilitating farmers’ organization at block level	1.93
3	Organizing capacity building programmes for farmers and farmers’ group	2.04
4	Organizing farmer’s meeting in setting aims and objectives	1.81
5	Organizing exhibition, kissan mela, fruits/ vegetable show	3.77
6	Establishing linkages for convergence with line department	1.97
C	Staffing	
1	Selection of beneficiaries in consultation with farmers’ advisory committee and village panchayats	2.23
2	Helping farmers’ group in selection of its members	1.93
3	Identification and development of leader for farmers group	1.79
4	Identification of farmers’ and farmers’ group for rewards and incentives	3.21
5	Helps in formation of Farm Information and Advisory Centre	3.04
6	Identification of resource persons for capacity building programmes	1.87
D	Directing	
1	Intimating farmers and resource persons for the capacity building programmes	3.32

S N	Role items	't' value
2	Facilitating farmer to farmer technology dissemination and learning	2.65
3	Helping farmers in getting necessary inputs from the service centre	3.02
4	Helping farmers groups in maintaining sustainability and leadership	2.75
5	Detailing the activities to be carried out by Farmers advisory committee	1.87
6	Providing timely and relevant information to farmers	3.79
E	Coordinating	
1	Coordinating the implementation of extension programmes detailed in BAP	1.85
2	Coordinating block meeting to discuss the issues brought by farmer's advisory committee	2.34
3	Coordinating assessment, refinement, validation and adoption of front line technologies with local research centres	3.03
4	Monitoring the functioning of farmers' group on a regular basis	2.07
5	Helps in federation of farmers group from block to district level	1.95
6	Helps in establishing information portals for information sharing	1.88
F	Reporting	
1	Documentation and publication of success stories of farmers	1.98
2	Reporting farmers' feed back in block meeting	2.07
3	Keeping inventory of all the beneficiary farmers and farm related activities	2.67
4	Supporting ATMA management committee in discharging its function	2.07
5	Compiling report on reviewing of progress and reporting the same to ATMA Management Committee	2.47
6	Submission of work plans to State Level sanctioning Committee	3.07
G	Budgeting	
1	Working on the credit appraisal and approval for the activities to be carried out	2.22
2	Maintaining proper record and account for the activities carried out	1.83
3	Provisioning rewards and incentives for successful famer(s)/ groups	1.90

S N	Role items	‘t’ value
4	Provisioning seed money/revolving fund for functioning of farmers’ group	2.21
5	Compiling report on utilization of fund and the physical progress of work	3.34
6	Mobilizing fund needed for documentation and publication of success stories	3.05

Appendix III

‘t’ value of the final statements of the scale on attitude towards ATMA

S.N	Statements	‘t’ value
1	ATMA has increased the employment opportunities in rural area	4.21
2	ATMA cannot meet the location specific needs of the farmers	8.44
3	Farmers feedback is fast through ATMA than earlier	2.06
4	ATMA is not helpful in converging line departments	5.28
5	ATMA is empowering farmers through group formation	3.73
6	Extension work became more challenging due to ATMA	3.16
7	ATMA has raised my performance in professional life	6.16
8	Working under ATMA is not rewarding	2.16
9	ATMA helps in up scaling and replication of technologies	2.41
10	ATMA develops self reliance among farmers	5.88
11	ATMA guidelines are too complicated to follow	1.87
12	Information exchange and sharing increases due to ATMA	2.86
13	Only the resourceful farmers can get the benefit of ATMA	2.14
14	ATMA assist in participatory planning and decision making	3.76
15	I am not satisfied working under ATMA	2.17
16	ATMA is helpful in up scaling of my career	4.28
17	ATMA has succeeded in rooting out poverty	3.00
18	ATMA is not changing the mindset of farmers	6.81
19	Money spent under ATMA is mere wastage	3.56
20	The future of extension lies in ATMA	4.23